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AUTHOR	Boe, Erling E.; Bobbitt, Sharon A.; Cook, Lynne H.; Whitener, Summer D.; Weber, Anita L.
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ABSTRACT

This paper presents 1989 National Center for Education Statistics data on public school special education and general education teacher retention, transfer, and attrition. The study examined teachers in 1987-1988 who, in the next year, either remained as teachers in the same school, transferred to a different public school, or left public school teaching. Data came from national probability samples of the 1987-1988 Schools and Staffing Survey and its longitudinal component, the Teacher Followup Survey of 1988-1989. Results indicated only a modest potential to reduce the attrition of special education teachers in efforts to improve retention of teachers at the school level. However, the study found that teacher retention could be improved by reduction in the rate of transfer of teachers to other schools. No single predictor variable alone showed the potential to improve teacher retention dramatically, but in combination, they showed significant potential. A combination of teacher characteristic variables relevant to hiring decisions and a combination of school variables relevant to employment conditions were found to improve teacher retention. The two appendixes present (1) a technical supplement with data sources, teacher definitions, and analysis procedures and (2) a table of results. (Contains 14 references.) (SM)

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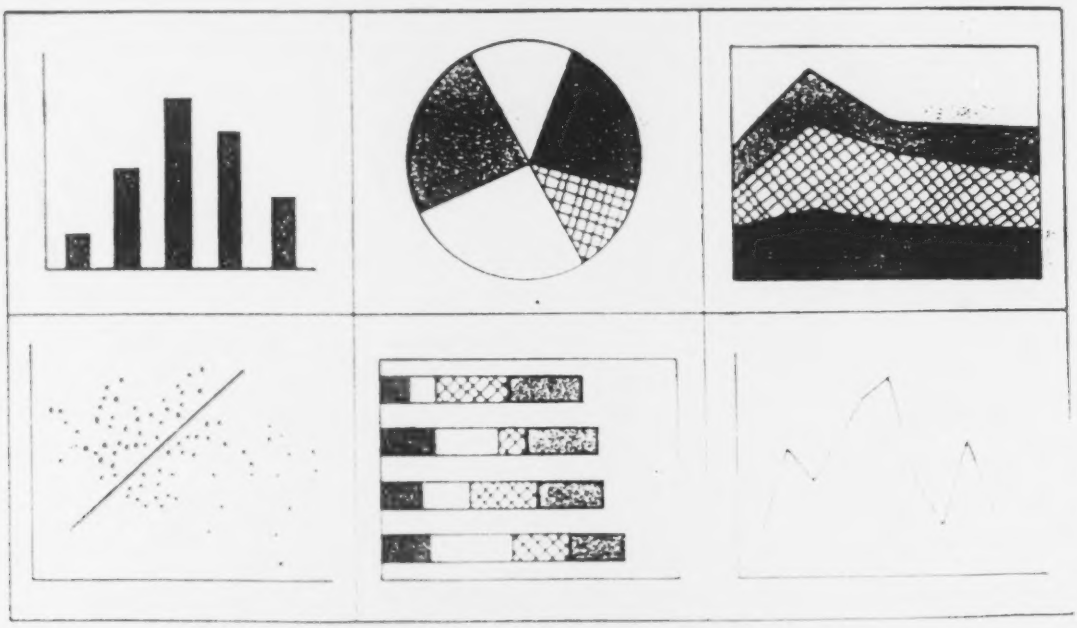

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Office of Educational Research and Improvement

Predictors of Retention, Transfer, and Attrition of Special and General Education Teachers:

Data from the 1989 Teacher Followup Survey

Working Paper No. 96-12 June 1996

Contact: Dan Kasprzyk
Surveys and Cooperative Systems Group
(202) 219-1588

U.S. Department of Education
Richard W. Riley
Secretary

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Susan Ahmed
Chief Mathematical Statistician
Statistical Standards and
Services Group

Samuel S. Peng
Director
Methodology, Training, and Customer
Service Program

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PREDICTORS OF RETENTION, TRANSFER, AND ATTRITION OF SPECIAL AND GENERAL EDUCATION TEACHERS: DATA FROM THE 1989 TEACHER FOLLOWUP SURVEY[1]

Erling E. Boe, Ph.D.
Professor of Education
Graduate School of Education
University of Pennsylvania

Sharon A. Bobbitt, Ph.D.
Senior Educational Statistician
National Center for Education Statistics
U.S. Department of Education

Lynne H. Cook, Ph.D.
Professor of Special Education
Department of Special Education
California State University, Northridge

Summer D. Whitener, B.A.
Statistician
National Center for Education Statistics
U.S. Department of Education

and

Anita L. Weber, Ph.D.
Research Specialist
Graduate School of Education
University of Pennsylvania

Center for Research and Evaluation in Social Policy
Graduate School of Education
University of Pennsylvania
Philadelphia, PA 19104

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EXECUTIVE SUMMARY

Teacher turnover has long been of concern in education because it represents instability in the teaching force and raises the prospect of shortages of qualified replacement teachers. While an understanding of factors contributing to teacher turnover can assist education policy makers and administrators in designing strategies to minimize the turnover of qualified teachers, there is a paucity of research-based information--especially from a national perspective for teachers in special education (SETs) and in general education (GETs).

With respect to the prediction of teacher turnover, two main components need to be distinguished and predictors for each component need to be studied separately. These components of turnover are the annual attrition of teachers from public school teaching and the transfer of teachers among public schools. Most previous research, which has been based on state and local data, has focused on predictors of teacher retention and attrition (but not on school transfer). In view of the importance of teacher turnover to maintaining a qualified teaching force, and the absence of national level research on predictors of turnover specifically of SETs and GETs, the purpose of this research was to investigate a wide variety of teacher, school, and district characteristics, either known or suspected to be associated with teacher retention and turnover. Parallel analyses were performed for SETs and GETs to identify aspects of the teacher retention problem that might be unique to each.

The main findings, as listed below, pertain to public school teachers (grades K through 12) in 1987-88 who, in the following year, either remained as teachers in the same school (stayers), transferred to a different public school (movers), or left public school teaching (leavers). The findings were based on the national probability samples of the 1987-88 Schools and Staffing Survey and its longitudinal component, the Teacher Followup Survey of 1988-89, of by the National Center for Education Statistics, the U.S. Department of Education. Since all findings are based on national estimates from sample data, the standard errors associated with each estimate should be considered in drawing conclusions.

1. **Teacher Age, Sex, and Race/Ethnicity**. For total teachers (i.e., SETs and GETs combined), age was strongly associated with teacher status (i.e., staying, moving, or leaving). Leavers showed the characteristic U-function with age, i.e., higher attrition percentages occurred at the younger and older ages than in the age group 30-49 years, reaching a level of over 20% per year for teachers over age 60 years. By contrast, there was a linear decline with age in the percentage of teachers who moved to a different public school, reaching a low of about 4% per year by age 58. The same age-related patterns for movers and leavers were seen in SETs and in GETs separately. However, teacher status was not associated with the sex or race/ethnicity of teachers.

2. **Teacher Marital and Family Circumstances**. For total teachers, those who experienced any change in marital status from 1987-88 to 1988-89 were about twice as likely to move to a different public school (8.5% of movers reported a marital change) or to leave public school teaching (8.1% of leavers reported a marital change) than were teachers who remained in the same public school (only 3.9% of stayers reported a marital change). Similarly, teachers with a child under age six were much more likely to leave public school teaching than were other teachers (8.3% leavers among teachers with a child under age six vs. 3.9% leavers among teachers with no children or a child age six or above). However, as the number of dependent children increased, the percentage of movers declined moderately (9.0% movers among teachers with no dependent children vs. 5.7% movers among teachers with three or more dependent children). A change in dependency status from 1987-88 to 1988-89 showed a more pronounced effect. Specifically, for teachers who had no minor dependents in 1987-88, those who gained one or more minor dependents by 1988-89 were much more likely to leave public school teaching (28.5% of leavers reported such a dependency change) than to stay in the same school (only 9.8% of stayers reported such change).

3. **Teacher Qualifications**. For total teachers, those who were fully certified in their main teaching assignment (87.4%) were more likely to stay in the same public school as compared to teachers who were partly certified (81.3%). Similarly, teacher turnover (both moving and leaving) was highest for teachers whose most recent degree was earned during the prior two years (14.3% for movers and 8.1% for leavers), and steadily declined for teachers with older degrees (5.9% for movers and 4.8% for leavers with degrees earned prior to 1979). In addition, more experienced teachers were less likely to move or leave: for teachers with four or more years of experience, 6.8% moved to a different school and 5.6% left teaching; however, for teachers with less than four years of experience, 14.5% moved to a different school and 9.2% left teaching. By contrast, teacher status in 1988-89 was not associated with the highest degree earned by teachers.

4. **Teaching Assignment and Employment Conditions**. For total teachers, those who were employed full-time were less likely to move to another public school (7.4%) or to leave teaching (5.7%) in comparison with part-time teachers (10.6% were movers and 9.4% were leavers). With respect to teaching at the elementary or secondary levels,

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elementary teachers moved to a different school at a somewhat higher rate (9.2%) than secondary teachers (6.1%), though there was virtually no difference in attrition percentages for elementary and secondary teachers. The largest association with teacher turnover was the base school-year salary for full-time teachers. Both school transfer and attrition declined systematically and substantially with increasing salary levels: for teachers earning $20,000 or less, 11.3% were movers and 6.5% were leavers; in contrast, for teachers earning more than $30,000, 4.5% were movers and 4.5% were leavers. This finding was statistically significant for both SETs and GETs, and is typical of the relationship between teacher salary and attrition that has been found in a number of studies using local and state data. It is the strongest and most reliable relationship between a workplace variable and attrition.

5. **School Characteristics.** School size, community type (i.e., rural, small town, suburban/large town, central city), and region of the nation were not associated with teacher turnover. With respect to district size, teachers employed in districts with 4,000 or more students were more likely to move to a different public school in 1988-89 than were those employed in relatively small districts of under 4,000 students.

In light of these results, two general conclusions can be drawn. First, no single predictor variable alone shows the potential to improve teacher retention dramatically. Second, combinations of predictor variables do show potential to improve teacher retention. Specifically, a combination of teacher characteristic variables relevant to hiring decisions, and a combination of school variables relevant to employment conditions, each yields a guideline for improving teacher retention, as follows:

- Hire experienced teachers, ages 39 to 55, who have dependent children over age five; and
- Place these teachers in full-time assignments, for which they are fully certified, and pay them high salaries.

Unfortunately, only a few elite school districts are in a position to implement both guidelines consistently. Limited supply of experienced teachers and limited resources will continue to require that many young inexperienced teachers be hired for assignments in which they lack full qualifications, and at relatively low salary levels. The results do point, however, to a few actions that school districts can take to enhance both teacher retention and recruitment of new hires. The most promising action is to make teaching positions attractive by offering full-time employment at as high a salary level as possible. For teachers already hired, districts can also

match as closely as possible a teacher's certification(s) to teaching assignment; for teachers lacking in basic qualifications, districts can support them in completing requirements for full certification.

With respect to possible differences between SETs and GETs in the prediction of teacher retention and turnover, few significant differences were found between these two groups of teachers in the association of predictor variables with each of the three components of turnover (i.e., staying, moving, and leaving). This evidence supports the premise that the prediction of turnover of SETs and GETs is more similar than dissimilar. Nonetheless, SETs did differ from GETs in certain respects. The most substantial and interesting differences pertained to SET versus GET stayers, the large group of teachers who continue in their teaching assignments from one year to the next. In contrast with GETs, SET stayers can be portrayed as predominantly younger females with teaching assignments concentrated at the elementary level who have, nonetheless, improved their qualifications by completing graduate degree study more often than have GET stayers.

The comparison of SET and GET leavers was remarkable in demonstrating that they were very similar on a wide variety of variables. For example, variables that were not significantly related to SET-GET differences in teacher attrition included gender, race/ethnicity, level of highest degree earned, school size, community type (central city, suburban, etc.), and region of the nation. These "negative" findings should at least moderate alarms that are occasionally sounded about the supposed disproportionate loss of male teachers, minority teachers, better educated teachers, and teachers from urban districts. From the results of both past research and this research that have been based on the actual behavior of teachers leaving the profession, it appears that whatever factors are responsible for teacher attrition apply equally to SETs and GETs.

INTRODUCTION

Teacher turnover has long been of concern in both special education and general education because it represents instability in the teaching force and raises the prospect of shortages of qualified replacement teachers. While an understanding of factors contributing to teacher turnover can assist education policy makers and administrators in designing strategies to minimize the turnover of qualified teachers, there is a paucity of research-based information--especially from a national perspective for teachers in special education and in general education.

With respect to the prediction of teacher turnover, two main components of turnover need to be distinguished and predictors for each component need to be studied separately. These components of turnover are the annual attrition of teachers from public school teaching and the transfer of teachers among public schools. As to the attrition component, approximately 142,000 teachers (K through 12) left public school teaching in the United States following the end of the 1987-88 school year (Boe, Bobbitt, & Cook, 1993). This created an equivalent national demand for entering replacement teachers[1] to be hired into teaching positions in public schools for the 1988-89 school year. The creation of openings for so many thousands of entering teachers every year poses several problems:

- The annual recruitment and placement of entering teachers is a time consuming and costly burden on public school administrators;
- Teachers hired to replace teachers who have left are not as qualified in terms of teaching experience (Rollefson, 1993); and
- Turnover and induction of entering teachers tends to be disruptive to instructional programs until new teachers are assimilated as fully functioning members of school staffs.

Furthermore, there is a demonstrated shortage of applicants who hold basic credentials for teaching positions in some fields. This has been especially true for special education where

[1]That is, 142,000 entering replacement teachers were required to supplement the approximately 2,229,000 teachers in 1987-88 who continued teaching in public schools in 1988-89 (Boe et al., 1993). Another 44,000 entering teachers were required to fill openings created by the expansion of the total number teaching positions (Snyder & Hoffman, 1995). Thus, attrition was the major source of demand for approximately 186,000 total entering teachers in one year.

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there has been a serious and chronic shortage of qualified teachers, and the prospect is that such shortage will continue into the foreseeable future unless current interventions become more effective and/or additional interventions are implemented (Boe, Cook, Kaufman, & Danielson, 1995).

With respect to the second component of teacher turnover, namely school transfer, approximately 173,000 teachers (K through 12) transferred from one public school to another between the 1987-88 and 1988-89 school years (Boe et al., 1993). Although the transfer of teachers among public schools does not represent a loss from the national teaching force, such transfers do pose recruitment problems at the school level. This problem has been especially characteristic of special education because of the relatively high school-transfer percentage in this field (12.1% versus 6.6% in general education based on 1988-89 data reported by Boe et al., 1993).

In view of the problems caused by teacher turnover (school transfer and attrition) and the shortage of qualified replacement teachers in fields such as special education, there has been much interest among educators in making teaching a more attractive profession to increase the stability of the profession. This interest pertains especially to reducing the rate at which teachers leave for other pursuits. However, the limited research-based information currently available to policy makers and administrators on predictors of teacher turnover restricts their ability to intervene effectively. Available research on teacher turnover includes:

- National and state data on attrition for total teachers (i.e., for special and general education teachers combined, as reviewed by Darling-Hammond & Sclan, 1996);
- National data on school transfer for total teachers (Bobbitt, Leich, Whitener, & Lynch, 1994); and
- State data on attrition for total teachers, special education teachers, and general education teachers (as reviewed by Billingsley, 1993, and Brownell & Smith, 1992).

As is apparent, no national-level data have been reported for predictors of turnover of special education teachers (SETs) or general education teachers (GETs) (either for attrition or school transfer), and no state data have been reported on predictors of GET turnover.

Previous research on predictors of teacher retention and attrition examined two basic types of dependent variables. Some research has been based on teachers who remained in teaching in contrast with former teachers who actually left--a definition of retention and attrition based on behavior (i.e., what teachers "do"). Other research has been based on the verbal reports of teachers regarding their plans to stay or leave, their commitment to teaching, their satisfaction with teaching, and the like (i.e., what teachers "say" they will do), and on the verbal reports of teachers about why they continued, or left, teaching in the past (i.e., what teachers "say" were the reasons for what they did in the past). Unfortunately, it is not known to what extent the verbal reports of teachers' plans or commitments are linked to their subsequent behavior of staying or leaving, or to what extent the verbal reports provided by teachers' for their reasons for staying or leaving accurately reflect the causes of the prior behavior of staying or leaving. Thus, only past research based on behavioral indices of teacher turnover will be reviewed briefly below.

Perhaps the most reliable predictor of teacher attrition has been age, with markedly higher rates of attrition reported for both younger teachers and older teachers (Darling-Hammond & Sclan, 1996). This pattern has been observed for both SETs and GETs in studies based on state data (Billingsley, 1993; Brownell & Smith, 1993). Though both teacher gender and ethnicity have been reported to be associated with teacher turnover in several studies using state data that predate 1985, more recent studies with national data have not found evidence that these variables are related to teacher turnover (Darling-Hammond & Sclan, 1996). Similarly, Grissmer and Kirby (1987) reviewed older research that linked changes in family status (such as marriage and birth of a child) in the initial years of teaching to moving and leaving. However, there is no research from the past ten years at any level that demonstrates a relationship between family change variables (or any other demographic variables, except teacher age) and teacher turnover. Economic and social changes during the past several decades that might account for these trends in the association of teacher demographic variables and turnover were reviewed by Darling-Hammond and Sclan (1996).

As to teacher qualification variables, various studies have produced inconsistent findings on the association of the level of teacher certification (e.g., regular vs. emergency) with turnover

of SETs; no such studies for GETs seem to have been reported. In contrast, there is considerable evidence that inexperienced teachers in general (and inexperienced SETs in particular) were more likely to leave teaching than experienced teachers (Billingsley, 1993). In addition, several studies have shown that both SETs and GETs (separately and combined) of high academic ability (as indicated by various test scores) were more likely to leave teaching than teachers of lower ability (Billingsley, 1993; Darling-Hammond & Sclan, 1996). Other research suggests that there may be linkages between teacher education variables (e.g., degree level, degree field, type of teacher training) and teacher turnover, but findings from various studies have not been consistent (Billingsley, 1993; Darling-Hammond & Sclan, 1996).

With the major exception of teacher salary, research has not shown consistent associations of actual teacher turnover with either school characteristics or working conditions. For example, there is no research evidence that variables such as class size, school size, community type (e.g., urban, suburban, rural), or region of the nation are associated with variations in teacher turnover. On the other hand, there is considerable evidence that higher salaries for SETs and total teachers are associated with higher rates of retention, and lower salaries with greater attrition (Billingsley, 1993; Brownell & Smith, 1992; Darling-Hammond & Sclan, 1996).

In view of the importance of teacher turnover to maintaining a qualified teaching force, and the absence of national level research on predictors of turnover specifically of SETs and GETs, the purpose of this research was to investigate, in national perspective, a wide variety of teacher, school, and district characteristics, either known or suspected to be associated with teacher retention and turnover of both SETs and GETs in the public sector. Parallel analyses of the turnover of SETs and GETs were performed to identify aspects of the teacher retention problem that might be unique to each. Knowledge of variables that are associated with retention, school transfer, and/or attrition in special education to either a higher or lower degree than in general education, has the potential to provide education policy makers and administrators with the ability to target interventions more precisely on the factors especially contributing to the transfer and attrition of teachers in these two fields.

METHOD

Data Sources

The research reported here is based on data collected through the Public School Teachers Questionnaire of the 1987-88 Schools and Staffing Survey (SASS), and the subsequent Questionnaire for Current Teachers and the Questionnaire for Former Teachers of the 1989 Teacher Followup Survey. Both surveys were administered by the National Center for Education Statistics (NCES) to national probability samples. These surveys are described briefly below, and in greater detail in Appendix A.

Schools and Staffing Survey

SASS collected detailed information about teachers, school administrators, schools, and school districts in the public sector during the 1987-88 school year. Based on a sample of 40,593 public school teachers, SASS provided nationally representative estimates of their characteristics, qualifications, teaching assignments, and a number of other variables.

Teacher Followup Survey

The Teacher Followup Survey (TFS) was the longitudinal component of the SASS teacher questionnaires, administered during the subsequent year, 1988-89. Based on a sample of 4,812 public school teachers, TFS provides nationally representative estimates about position changes made by teachers from the SASS school year to the subsequent TFS year. Thus, using the two data bases, it is possible to identify changes in teacher variables from one year to the next in considerable detail--changes such as in employment status, qualifications, and teaching assignments.

The Teacher Sample

In keeping with the SASS definition, a teacher was any full-time or part-time teacher whose main assignment was teaching in any of grades K-12, including itinerant teachers and long-term substitutes. Excluded from this definition were short-term substitute teachers, student teachers, teacher aides, and all non-teaching personnel.

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All teachers were classified into two main teaching fields: special education and general education. SETs were defined as public school teachers (K-12) whose current main teaching assignment was in any one of a variety of teaching specializations within special education, while GETs were defined as all public school teachers (K-12) other than SETs. The size of the total teacher sample for this research was 4,798 (639 SETs and 4,159 GETs). Additional information about the definition of teachers, the selection of the teacher sample, and the sample sizes is provided in Appendix A.

Design

The research reported here was designed to analyze, from a national perspective, a large number of potential predictors of three components of teacher status in public schools in 1988-89, namely, predictors of retention, school transfer, and attrition of SETs and GETs from school year 1987-88.[2] The study focused on a variety of teacher demographic characteristics, teacher qualifications, teacher employment conditions, and school characteristics as potential predictors of teacher status, as described below.

Outcome Variables

School retention. The school retention component included public school teachers (K through 12) in 1987-88 who continued as public school teachers (K through 12) in the same school in 1988-89. Such teachers are called "stayers." The sample size for total stayers was 2,065 (241 SETs and 1,824 GETs).

School transfer. The school transfer component included public school teachers (K through 12) in 1987-88 who transferred to a different public school in 1988-89, either in the same district, or in a different district (both in-state and out-of-state). Such teachers are called "movers." The sample size for total movers was 1,121 (210 SETs and 911 GETs). Two subcomponents of school transfer (i.e., reassignment to a school within the same district and migration to a school in a different district) were combined to provide sample sizes sufficiently large to study various teacher, school, and LEA characteristics of interest. As will be reported

[2]Operational definitions of these and other terms are available upon request from the senior author.

later, district size, as measured by number of enrolled students, determines to a large extent whether a mover is a reassignee within a district or a migrant to another district.

Attrition. The attrition component included public school teachers (K through 12) in 1987-88 who left public school teaching in 1988-89. Since this research addressed public school teachers K through 12, teachers of this type in 1987-88 who left to teach pre-kindergarten or to teach in private schools in 1988-89 are included in attrition, as well as those who left the teaching profession entirely. Such teachers are called "leavers." The sample size for total leavers was 1,612 (188 SETs and 1,424 GETs).

Predictor Variables

Some predictor variables were selected for study because they had been investigated in previous research at the local or state levels, while others were selected for initial exploration of potential associations with teacher status. The predictor variables for which there was sufficient sample size to analyze their possible association with teacher status (staying, moving, and leaving) are listed below.

Teacher demographic characteristics:

- Teacher age (<30, 30 - 39, 40 - 49, 50+ years)
- Teacher sex (female, female)
- Teacher race/ethnicity (white, minority)
- Teacher marital status (married, formerly married, never married)
- One or more children under age 6 years (yes, no)
- Number of dependent children (none, 1 or 2, 3+)
- Marital status change from 1987-88 to 1988-89 (any marital status change, such as from single to married or from married to divorced, versus no marital status change)
- Dependency status change from 1987-88 to 1988-89 (from no children to one or more children, versus no children in both years).

Teacher qualifications:

- Certification status in main teaching assignment (regular/standard/probationary, temporary/provisional/emergency)
- Year of most recent degree (before 1979, during 1979 - 84, during 1985-87)
- Highest degree earned (BA/BS, MA/MS, Education Specialist or higher)
- Number of years of part-time and full-time teaching experience (1 - 3, 4+ years)

Teacher assignment and employment conditions:

- Employment status (full-time, part-time)
- Teaching level (elementary, secondary)
- Base school-year salary for full-time teachers ($1,000 - $20,000, $20,001 - $30,000, $30,001+)
- Availability of pension benefit (yes, no)

School characteristics:

- School size (<400, 401 - 700, 701+ student-enrollment)
- School level (elementary, secondary, combined)
- Student achievement level for self-contained classes as estimated by teachers (primarily higher achieving students, primarily average achieving students, primarily lower achieving students, students of widely differing achievement levels, relative to the rest of the school)
- Minority enrollment percentage (<20%, 20+%)
- District Size (<1,000, 1,001 - 4,000, 4,001 - 14,000, 14,001+ students).
- Community type (rural, small town, suburban/large town, central city)
- Region (northeast, north central, south, west)

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Analysis Procedures

Weighted national estimates of the numbers of teachers (as well as associated percentages and standard errors) were computed by procedures used by the National Center for Education Statistics (NCES). Statistical tests for associations among variables were performed using chi square, with appropriate adjustments for the structure of the survey design. More detailed information is provided in Appendix A.

RESULTS AND DISCUSSION

The results of this research are presented in two sections. The first section presents the analysis of associations between selected predictor variables and teacher status (i.e., staying, moving, and leaving), separately for SETs, GETs, and total teachers. The second section presents the analysis of direct comparisons of SETs and GETs with respect to the associations of predictor variables with each component of teacher status (i.e., separately for staying, moving, and leaving). As previously described, all the turnover data reported here apply to public school teachers who either moved to other public schools, or left public school teaching. Thus, public school teachers who moved to private schools were classified as leaving public school teaching. The rationale for aggregating school reassignment and migration into the overall school transfer component of teacher status is presented first.

School Transfer: Rationale for Aggregating School Reassignment and Migration

An analysis of school reassignment (i.e., teachers who transferred from one school to another within a public school district) and school migration (i.e., teachers who transferred from a school in one public school district to a school in another public school district) revealed that a major determinant of whether a mover is a reassignee or a migrant is the size of the district (as measured by student enrollment) which sponsors the school from which a teacher moves. Specifically, the smaller the district, the more likely the mover is a migrant; the larger the district, the more likely the mover is a reassignee (see Figure 1). This insight provided justification for collapsing school reassignment and migration into a single category of school

transfer. This aggregation also provided sufficient sample size to study the phenomenon of school transfer as a function of the predictor variables selected for analysis.

Prediction of Retention, School Transfer, and Attrition

The associations of predictor variables with teacher status (i.e., staying, moving, and leaving) are presented in Tables 1 through 4 separately for SETs, GETs, and total teachers. The results of tests of statistical significance of the association of predictor variables with teacher status are listed in Table 5. All tables are presented in Appendix B. In view of the large number of associations investigated, only predictor variables that were related to teacher status at the $p < .01$ level were considered to be statistically significant.

Teacher Demographic Characteristics and Turnover

The associations between several teacher demographic variables and teacher status in 1988-89 (i.e., retention, school transfer, and attrition percentages) are shown in Table 1 (Appendix B), separately for SETs, GETs, and total teachers, and are discussed in turn below. Chi square tests of significance of the associations are reported in Table 5.

Age. As seen in Tables 1 and 5 for total teachers, age was strongly associated with decisions of teachers to change school or leave teaching in 1988-89, $\chi^2(6, N = 4{,}752) = 113.79$, $p < .001$. The age function for leavers and movers was very different, such that the percentage of movers declined systematically with increasing age whereas leavers showed the characteristic U-function with age, i.e., higher attrition percentages occurred at the younger and older ages than in the age group 30-49 years. The same statistically significant patterns for movers and leavers were seen in SETs and in GETs separately. The relationship between age and teacher status for total teachers is depicted in Figure 2 for finer age group categories. Both teachers up to age 45 years and over age 50 years were less stable in their teaching positions (i.e., less likely to be a stayer), with maximum stability occurring in the age range 45-50 years. As age increases beyond this range, teachers leave public schools at a sharply increasing rate--reaching over 20% per year for teachers over age 60 years. By contrast, there is a linear decline with age in the percentage of teachers that move to a different public school, reaching a low of about 4% per year by age 58. This U-shaped function is typical of the relationship

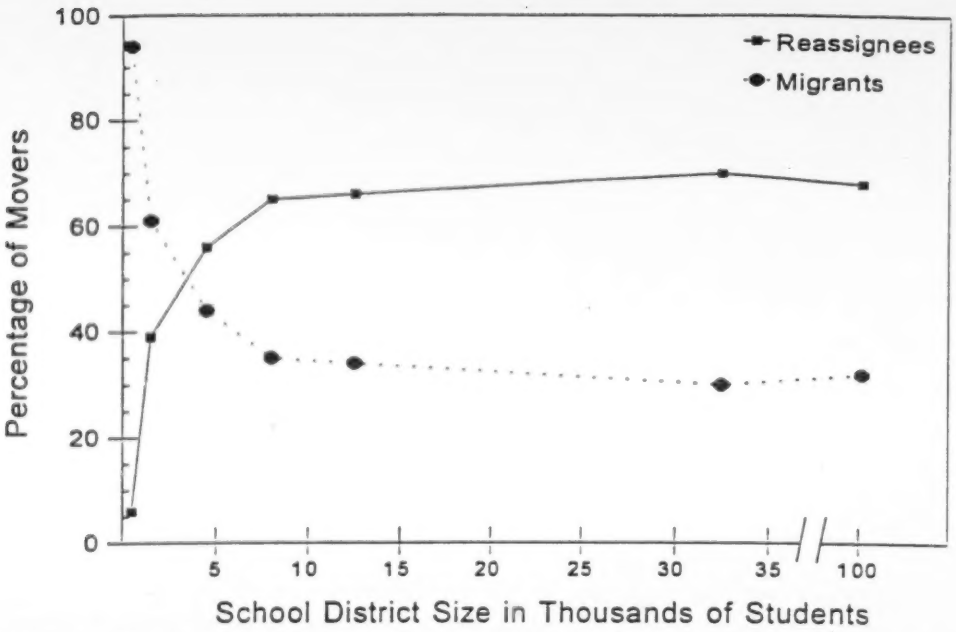

Figure 1. Percentage of movers (i.e., teachers who transfer from one public school to another) from 1987-88 to 1988-89 as a function of district size for two subcategories of teachers: within district reassignees and cross-district migrants.

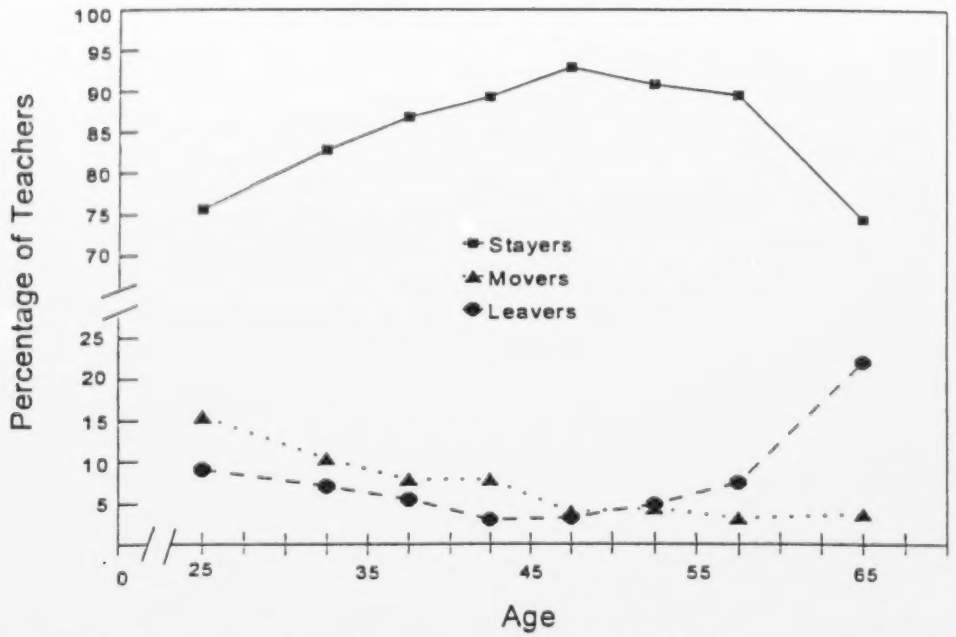

Figure 2. Percentage of public school teachers from 1987-88 who continued to teach in the same school (stayers), who transferred to a different school (movers), and who left public school teaching (leavers) for the 1988-89 school year as a function of teacher age.

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between teacher age and attrition that has been found in a number of studies (Billingsley, 1993; Darling-Hammond & Sclan, 1996). It is the strongest and most reliable relationship between a teacher demographic variable and attrition found in research data. The age-attrition function shown in Figure 2 extends previous findings by depicting this function using small age categories for the national teaching force in public schools. By contrast, there has been no previous research on the relationship between teacher age and school retention or transfer separately for SETs and GETs as shown in Table 1. As indicated above, strong relationships were found here between teacher age and all three components of teacher status in 1988-89.

Sex. Teacher status in 1988-89 was not associated with teacher sex (see Tables 1 and 5). This finding is consistent with recent research reviewed by Darling-Hammond and Sclan (1996).

Race/ethnicity. As seen in Tables 1 and 5, teacher status in 1988-89 was not associated with teacher race/ethnicity. This finding is also consistent with recent research reviewed by Darling-Hammond and Sclan (1996).

Marital status and change in marital status. For GETs, those who had never married in 1987-88 were more likely to move to a different public school in 1988-89 than were those who were married or were formerly married, while those who were formerly married were more likely to remain in their teaching position, $\chi^2(4, N = 4{,}122) = 19.39, p < .001$ (see Tables 1 and 5). The patterns of moving and leaving as a function of marital status were not statistically significant for SETs or total teachers. The reason for these findings is not clear. No previous research on the possible relationship between marital status, per se, and teacher turnover has been reported. However, our analysis of the change in marital status between 1887-88 and 1988-89 revealed differences of more interest. For all teachers combined, those who experienced any change in marital status from 1987-88 to 1988-89 were about twice as likely to move to a different public school (8.5% of movers reported a marital change) or to leave public school teaching (8.1% of leavers reported a marital change) than were teachers who remained in the same public school (only 3.9% of stayers reported a marital change). The percentage of stayers was significantly lower than that of movers ($t(193) = 2.94, p < .01$ two-tailed) and of leavers ($t(179) = 2.21, p < .05$ two-tailed). Finer grain analyses of type of marital status change, or for SETs and GETs separately, were not feasible due to low sample

sizes. These findings represent the first evidence of a relationship between marital status change and teacher attrition with national data, and are consistent with local data linking family status changes (such as marriage) with teacher turnover (as reviewed by Grissmer & Kirby, 1987).

Children under age six years. For total teachers, those with a child under age six were much more likely to leave public school teaching in 1988-89 than were those with an older child (8.3% leavers among teachers with a child under age six vs. 3.9% leavers among teachers with a child age six or above), and were also slightly less likely to move to a different school, $\chi^2(2, N = 4,368) = 19.76, p < .001$ (see Tables 1 and 5). This analysis excluded teachers who retired in 1988-89 because it was unlikely that many would have had children under age six. The patterns of moving and leaving as a function of having a young dependent child was also statistically significant for GETs, but not for SETs. These findings are the first to demonstrate a relationship between age of children and teacher turnover with national data, and are consistent with local data linking family status changes (such as the birth of a child) with teacher turnover (as reviewed by Grissmer & Kirby, 1987).

Number of dependent children and change in child dependency status. As seen in Tables 1 and 5 for total teachers, the number of dependent children was associated with decisions of teachers to change school or leave teaching in 1988-89, $\chi^2(4, N = 4,379) = 13.77, p < .01$. This analysis also excluded teachers who retired in 1988-89 because it was unlikely that many would have had dependent children. The association was seen primarily with movers instead of leavers, such that the percentage of movers declined moderately with increasing number of dependent children (9.0% movers among teachers with no dependent children vs. 5.7% movers among teachers with three or more dependent children). The patterns of moving and leaving as a function of number of dependent children were not statistically significant for SETs and GETs separately, though GETs were similar to total teachers in this respect. These findings are the first to demonstrate a relationship between number of children and teacher turnover with national data (for male and female teachers combined), and are consistent with other national data that revealed a similar result for female teachers (Heyns, 1988). Though the predictor variable of number of dependent children was only moderately associated with teacher status, the change in dependency status from 1987-88 to 1988-89 showed

a more pronounced effect. Specifically for teachers who had no minor dependents in 1987-88, those who gained one or more minor dependents by 1988-89 were much more likely to leave public school teaching (28.5% of leavers reported such a dependency change) than to stay in the same school (only 9.7% of stayers reported such change) or to move to a different school (only 12.7% of movers reported such change). The percentage of leavers was significantly higher than that of stayers ($t(211) = 2.96$, $p < .01$ two-tailed) and of movers ($t(188) = 2.04$, $p < .05$ two-tailed). Sample sizes were too small to analyze SETs and GETs separately.

Teacher Qualifications and Turnover

The associations between several teacher qualifications and teacher status in 1988-89 are shown in Table 2, separately for SETs, GETs, and total teachers, and are discussed below. Chi square tests of significance of the associations are reported in Table 5.

Certification status in main teaching assignment. For total teachers, the certification status of teachers in 1987-88 was associated with decisions of teachers to change school or leave teaching in 1988-89, $\chi^2(2, N = 3,991) = 14.04$, $p < .001$ (see Tables 2 and 5). Teachers who were fully certified in their main teaching assignment were more likely to stay in the same school (87.4%) (rather than moving or leaving) as compared to teachers who were partly certified (81.3%). The patterns of staying, moving, and leaving as a function of certification were not statistically significant for SETs and GETs separately, though both SETs and GETs were similar to total teachers in this respect. These findings, based on national data for total teachers, are the first to demonstrate a relationship between certification status and turnover. However, the absence of statistically significant associations between these variables for SETs or GETs separately does not help resolve inconsistent findings reported in prior research for SETs (Billingsley, 1992; Brownell & Smith, 1993).

Year of most recent degree. As seen in Tables 2 and 5 for total teachers, the year of most recent degree as of 1987-88 was associated with decisions of teachers to change school or leave teaching in 1988-89, $\chi^2(4, N = 4,457) = 58.74$, $p < .001$. Teacher turnover (both moving and leaving) was highest for teachers whose most recent degree was earned during the prior two years (14.3% for movers and 8.1% for leavers), and steadily declined for teachers with older

degrees (5.9% for movers and 4.8% for leavers with degrees earned prior to 1979). While it might be hypothesized that this finding merely reflects the propensity of younger teachers to turnover at a higher rate, this is not necessarily so. Other research (Boe, Cook, Bobbitt, & Terhanian, November, 1995) has shown that continuing teachers in public schools earned approximately 40% of all recent degrees held by the teaching force in 1990-91 (the other 60% of recent degrees were earned by entering teachers). Thus, for both continuing and entering teachers, it is likely that having recently earned a degree tends to function as a ticket out of the profession or into a different public school. This finding was statistically significant for GETs, but not for SETs who exhibited a different pattern. This research is the first to demonstrate a relationship between teachers' year of most recent degree and turnover.

Highest degree earned. Teacher status in 1988-89 was not associated with the highest degree earned by teachers (see Tables 2 and 5). The modest amount of other research investigating the relationship between this variable and teacher turnover with local and state data bases has yielded inconsistent results (Billingsley, 1993).

Years of teaching experience. As seen in Tables 2 and 5 for total teachers, the years of teaching experience as of 1987-88 was associated with decisions to change school or leave teaching in 1988-89, $\chi^2(2, N = 4{,}798) = 50.82$, $p < .001$. As with being fully certified in one's main teaching assignment, more experienced teachers were less likely to turnover (for teachers with four or more years of experience, 6.8% moved to a different school and 5.6% left teaching; in contrast, for teachers with less than four years of experience, 14.5% moved to a different school and 9.2% left teaching). This finding was statistically significant for GETs, but not for SETs although they exhibited the same pattern. This research is the first to demonstrate a relationship between teaching experience and turnover specifically for GETs in national perspective. Others have found similar results at the national level using the 1987-88 TFS for total teachers combined (Bobbitt, et al., 1994), while another researcher using state data for SETs and GETs separately has also obtained similar results (Singer, 1993).

Teacher Assignment, Employment Conditions, and Turnover

The associations between several teacher assignment/employment conditions and teacher status in 1988-89 are shown in Table 3, separately for SETs, GETs, and total teachers, and are discussed below. Chi square tests of significance of the associations are reported in Table 5.

Full-time versus part-time employment. For total teachers, full- or part-time employment status in 1987-88 was associated with decisions to change school or leave teaching in 1988-89, $\chi^2(2, N = 4,798) = 9.89, p < .01$ (see Tables 3 and 5). Teachers who were employed full-time were less likely to move to another public school (7.4%) or to leave teaching (5.7%) in comparison with part-time teachers (10.6% were movers and 9.4% were leavers). This finding was not statistically significant for SETs or for GETs, although GETs exhibited the same pattern as total teachers. It appears that this is the first research to analyze employment status, and provide the first evidence of a relationship between it and teacher turnover.

Teaching level. As seen in Tables 3 and 5 for total teachers, teaching level (elementary versus secondary levels) in 1987-88 was associated with decisions to change school or leave teaching in 1988-89, $\chi^2(2, N = 4,798) = 21.90, p < .001$. While there was virtually no difference in attrition percentages for elementary and secondary teachers (6.1% vs. 5.9%, respectively), the results indicated that elementary teachers moved to a different school at a somewhat higher rate (9.2%) than secondary teachers (6.1%). The patterns of moving and leaving as a function of teaching level was also statistically significant for GETs, but not for SETs who nonetheless exhibited similar behavior.[3] The lack of association between teaching level and attrition observed here with data from the national level is inconsistent with results from state data, some of which showed higher attrition for secondary teachers and some of which showed the opposite (Brownell & Smith, 1992). Further research should investigate whether teaching level interacts with some other variable in predicting teacher attrition. However, the finding in this research of an association between teaching level and school

[3]The results of analyzing the "teaching level" variable reported here were based on the classification of teachers into elementary and secondary levels based on their self reports. Also analyzed was the association of teacher status with the variable of "school level" (elementary, secondary, combined) based on reports from a school's administrative office. Analyses of the school level variable confirmed the associations between teacher status and teaching level (i.e., elementary versus secondary levels) reported here.

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transfer is new, and suggests one way in which elementary teachers are more mobile than secondary teachers.

Base school year salary for full-time teachers. For total teachers, the base school-year salary for full-time teachers in 1987-88 was associated with decisions to change school or leave teaching in 1988-89, $\chi^2(4, N = 3,907) = 35.51, p < .001$ (see Tables 3 and 5). Both school transfer and attrition declined systematically and substantially with increasing salary levels (for teachers earning $20,000 or less, 11.3% were movers and 6.5% were leavers; in contrast, for teachers earning more than $30,000, 4.5% were movers and 4.5% were leavers). This finding was statistically significant for both SETs and GETs, and is typical of the relationship between teacher salary and attrition that has been found in a number of studies using local and state data (Billingsley, 1993; Brownell & Smith, 1992; Darling-Hammond & Sclan, 1996). It is the strongest and most reliable relationship between an employment condition and attrition found in research data. The results reported here for the consistent association of teacher salary both with school transfer and teacher attrition are the first to be based on national data, and provide some of the most persuasive evidence of the importance of this variable to teacher turnover.

Other teacher assignment and employment conditions. The remaining teacher employment condition (availability of pension benefit) was analyzed, but results are not reported here due to lack of association with teacher status (i.e., staying, moving, or leaving).

School Characteristics and Teacher Turnover

The associations between several school characteristics and teacher status in 1988-89 are shown in Table 4, separately for SETs, GETs, and total teachers, and are discussed below. Chi square tests of significance of the associations are reported in Table 5.

School size. Teacher status in 1988-89 was not associated with the size of schools (as measured by the number of enrolled students) in which teachers were employed (see Tables 4 and 5). While Bobbitt et al. (1994) have reported similar findings for all public school teachers combined, the results reported here extend these results to SETs and GETs separately.

District size. For total teachers, those who were employed in districts with more than 4,000 students in 1987-88 were more likely to move to a different public school in 1988-89 than

were those who were employed in relatively small districts with 4,000 students or less, $\chi^2(6, N = 4,317) = 17.14, p < .01$ (see Tables 4 and 5). The patterns of moving and leaving as a function of district size were not statistically significant for SETs or for GETs separately, though GETs exhibited the same pattern as total teachers. It is possible that school transfer becomes more frequent for teachers employed in larger school districts because such districts have more schools and, therefore, there are more options for a teacher to move to a different school without having to change their hiring district or place of residence. No prior research on the relationship between district size and teacher turnover has been reported.

Community type. Teacher status in 1988-89 was not associated with the type of community (i.e., central city, suburban, etc.) in which teachers were employed (see Tables 4 and 5). While Bobbitt et al. (1994) have reported similar findings for three categories of community type for all public school teachers combined from the 1991-92 SASS, the research reported here extended these results to four categories of community type for SETs, GETs, and total teachers separately, and to an earlier time period. The consistency of these results across two different surveys (i.e., TFS from 1988-89 and from 1991-92), and with different categories of community type, lend confidence to the conclusion that teacher turnover, in national perspective, is not related to the type of community in which teachers are employed.

Region. As shown in Tables 4 and 5, teacher status in 1988-89 was not associated with the regional location of schools in which teachers were employed. While Bobbitt et al. (1994) have also reported similar findings for all public school teachers combined, the results reported here extend these results to SETs and GETs separately.

Other school characteristic variables. One of the other school characteristics investigated, school level (elementary, secondary, combined) was significantly related to teacher turnover, $\chi^2(4, N = 4,4272) = 14.26, p < .01$. These findings were discussed above in the section entitled **Teaching level**. The analyses of the remaining two school characteristics, student achievement level as estimated by teachers and minority enrollment percentage, are not reported here due to lack of association with teacher status (i.e., staying, moving, or leaving). Our investigation of the possible association between student achievement and teacher turnover was not definitive because, within the SASS data base, student achievement was scaled by teacher

estimates rather than by standardized achievement tests. Further research should be conducted using tested student achievement as the predictor variable. Bobbitt et al. (1994), also using SASS and TFS data, did not detect an association between minority enrollment percentage and turnover for all public school teachers combined. The results reported here extend these negative results to SETs and GETs separately.

Direct Comparisons of Special and General Education Teachers

Direct comparisons of SETs and GETs, in terms of their association with predictor variables for each component of teacher status (i.e., separately for stayers, movers, and leavers), are presented in Tables 6 through 9. The results of all the tests of statistical significance for the differences between SETs and GETs seen in each of these comparisons are listed in Table 10. All tables are presented in Appendix B. In view of the large number of comparisons investigated, only predictor variables that were related to differences between SETs and GETs at the $p < .01$ level were interpreted as statistically significant.

Since no previous research has been reported on differences between SETs and GETs when classified separately as stayers, movers, and leavers, these analyses represent the first attempt to investigate differences between SETs and GETs in this way.

Demographic Characteristics: SET-GET Comparisons

Comparisons of SETs and GETs in terms of their association with several teacher demographic variables are shown in Table 6, separately for stayers, movers, and leavers in 1988-89, and are discussed in turn below. Chi square tests of significance of the associations are reported in Table 10.

Age. SET stayers were considerably younger than their GET counterparts ($\chi^2(3, N = 2,046) = 34.73, p < .001$), while the ages of SET and GET movers and leavers were not significantly different (see Tables 6 and 10) . Because almost twice the percentage of SET stayers (17.0%) than GET stayers (9.4%) were less than 30 years old in 1988-89 (Table 6) and because this age group also has high turnover percentages (Table 1), it should be expected that SETs will continue to exhibit a higher percentage of school transfer and attrition than GETs (as reported by Boe, et al., 1993).

Sex. As seen in Tables 6 and 10, SET stayers included a considerably higher proportion of females (87.0%) than did GET stayers (68.4%) ($\chi^2(1, N = 2,059) = 26.76, p < .001$), whereas the gender distribution of SET and GET movers and leavers was not significantly different.

Race/ethnicity. SET stayers, movers, or leavers did not differ from their GET counterparts in terms of the distribution of majority and minority teachers (see Tables 6 and 10).

Marital status. As seen in Tables 6 and 10, SET leavers were much more likely to be divorced, separated, or widowed (36.4%) than were GET leavers (7.8%), whereas GET leavers were much more likely to be married (78.2%) than were SET leavers (52.4%) ($\chi^2(2, N = 1,606) = 10.45, p < .01$). Why this should be is not clear. Variation in the marital status of SET stayers and movers did not differ significantly from that of GETs.

Children under age six years. SETs and GETs did not differ in the percentage of children under age six for either stayers, movers, or leavers (see Tables 6 and 10).

Number of dependent children. Neither SET stayers, movers, or leavers differed from their GET counterparts in terms of the number of dependent children (see Tables 6 and 10).

Qualifications: SET-GET Comparisons

Comparisons of SETs and GETs in terms of their association with several teacher qualification variables are shown in Table 7, separately for stayers, movers, and leavers in 1988-89, and are discussed below. Chi square tests of significance of the associations are reported in Table 10.

Certification status in main teaching assignment. Neither SET stayers, movers, or leavers differed significantly from their GET counterparts in terms of the percentages who were fully certified in their main teaching assignment (see Tables 7 and 10).

Year of most recent degree. SET stayers and movers earned degrees more recently than did their GET counterparts (see Tables 7 and 10). For example, 63% of SET stayers earned their last degree between 1979 and 1987, i.e., within the prior eight-year period, while only 33% of GET stayers had earned their last degree during that period ($\chi^2(2, N = 1,919) = 32.86, p < .001$). This finding could be related to the fact that SET stayers were significantly

younger than GET stayers, as seen in Table 6. However, SET and GET leavers did not differ significantly in the recency of their degrees.

Highest degree earned. As seen in Tables 7 and 10, 68% of SET stayers had earned a graduate degree as compared to 46% of GET stayers, $\chi^2(2, N = 2,045) = 16.88, p < .001$. However, SET and GET movers and leavers were not significantly different in this respect. It is noteworthy that a considerably higher percentage of SET stayers than GET stayers had completed graduate degrees in spite of the fact that SET stayers were considerably younger than their GET counterparts (see Table 6). The former finding is consistent with the fact that the educational requirements for teaching in special education is often more demanding than for teaching in general education.

Years of teaching experience. SETs and GETs did not differ significantly in the number of years of teaching experience for either stayers, movers, or leavers (see Tables 7 and 10).

Assignment and Employment Conditions: SET-GET Comparisons

Comparisons of SETs and GETs in terms of their association with several teacher assignment and employment conditions are shown in Table 8, separately for stayers, movers, and leavers in 1988-89, and are discussed below. Chi square tests of significance of the associations are reported in Table 10.

Full-time versus part-time employment. Neither SET stayers, movers, or leavers differed significantly from their GET counterparts in terms of the percentages who were employed as full-time teachers (see Tables 8 and 10).

Teaching level. As seen in Tables 8 and 10, a significantly higher percentage of SET stayers (63%) were employed as elementary teachers than were GET stayers (49%) ($\chi^2(1, N = 2,065) = 10.12, p < .01$). Although SET movers and leavers were not significantly different from GET movers and leavers in this respect, the observed differences were in the same direction as seen for stayers.

Base school year salary for full-time teachers. The salaries of SET movers (only 6% of whom earned above $30,000 per year) were considerably below those of GET movers (18% of whom earned above $30,000 per year) ($\chi^2(2, N = 929) = 9.50, p < .01$), while the base

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salary levels of SET stayers and leavers did not differ significantly from their GET counterparts (see Tables 8 and 10). Though not statistically significant, the observed differences between the salaries of SET and GET stayers and SET and GET leavers were in the same direction as seen for SET and GET movers. The lower salary levels of SET than GET movers helps explain the higher rate of school transfer among SETs than GETs (Boe et al., 1993).

Other teacher assignment and employment condition. The remaining teacher employment condition (availability of pension benefits) was analyzed, but results are not reported here due to lack of significant differences between SETs and GETs.

School Characteristics: SET-GET Comparisons

Comparisons of SETs and GETs in terms of their association with several school characteristics are shown in Table 9, separately for stayers, movers, and leavers in 1988-89, and are discussed below. Chi square tests of significance of the associations are reported in Table 10.

School size. Neither SET stayers, movers, or leavers differed significantly from their GET counterparts as a function of their employment in schools of various sizes (see Tables 9 and 10).

District size. SET stayers, movers, or leavers also did not differ significantly from their GET counterparts as a function of their employment in school districts of various sizes (see Tables 9 and 10).

Community type. As seen in Tables 9 and 10, neither SET stayers, movers, or leavers differed significantly from their GET counterparts in their distribution across the types of community where they taught.

Region. For either stayers, movers, or leavers, SETs and GETs did not differ significantly according to the region of the U.S. in which they were employed (see Tables 9 and 10).

Other school characteristic variables. For the remaining school characteristics (school level, student achievement level, and minority enrollment percentage), there were no statistically significant differences between SETs and GETs in their association with each component of teacher status (i.e., stayers, movers, and leavers).

CONCLUSION

Improving the Retention of Teachers at the School Level

Based on a different analysis using the same national survey data from 1988-89 as used in this research, Boe, et al. (1993) concluded that there was only modest potential to reduce the attrition of SETs in efforts to improve retention of teachers at the school level. However, teacher retention may also be improved through a second strategy, namely, the reduction in the rate of transfer of teachers to other schools. Taken together, the combination of attrition and transfer amounted to a school turnover of 20% for SETs and 12% for GETs (Boe et al., 1993), levels high enough to encourage efforts to improve retention.

This study has identified several statistically significant associations between selected predictor variables and teacher retention in public schools. The question of practical interest is whether the size of one or more of the associations between predictor variables and teacher retention was sufficiently large to be of importance to education policy makers and administrators in contemplating actions intended to improve teacher retention (and, therefore, reduce turnover). One index of the size of the association of a predictor variable with teacher retention is the degree of variability seen in the retention percentages for a given predictor variable. For example, for total teachers, the retention percentages for various age groups ranged from a high of 91% for teachers ages 40-49 to a low of 76% for teachers under age 30, yielding a 15% spread for this predictor. Similarly, the retention percentages for various levels of teaching experience ranged from 88% for four+ years of experience to 76% for <fours years, yielding a 12% spread. Also, retention percentages for levels of annual salary ranged from 91% for salaries over $30,000 to 82% for salaries of $20,000 or less, yielding a 9% spread.

Using such information about the variability of retention percentages for a given predictor, two conclusions can be drawn. First, no single predictor variable alone shows the potential to improve teacher retention dramatically, i.e., no single predictor variable shows a spread of retention percentages greater than 15% across its categories. Still, variability in the retention percentages of individual predictor variables was not trivial. Second, combinations of predictor variables do show potential to improve teacher retention substantially. Specifically, the results

obtained here suggest a combination of teacher characteristic variables relevant to hiring decisions, and a combination of school variables relevant to employment conditions, each of which yields a guideline for improving teacher retention, as follows:

- Hire experienced teachers, ages 39 to 55, who have dependent children over age five; and
- Place these teachers in full-time assignments, for which they are fully certified, and pay them high salaries.

The first guideline, based on teacher characteristics, identifies teachers who are beyond early life cycle changes (i.e., marriage and birth of a first child) and early career explorations--the two conditions that are especially associated with turnover. The second guideline, based on employment conditions, identifies stable, appropriate, and well-paid teaching positions.

Unfortunately, only a few elite school districts are in a position to implement both guidelines consistently. Limited supply of experienced teachers and limited resources will continue to require that many young inexperienced teachers be hired for assignments in which they lack full qualifications, and at relatively low salary levels. Even for districts that are in a position to minimize teacher turnover by using these guidelines, our study shows that qualified teachers will be lost inevitably due to demographic factors not under district control such as teacher aging, change in marital status, and the initial acquisition of dependent children.

The results do point, however, to a few actions that school districts can take to enhance both teacher retention and recruitment of new hires. The most promising action is to make teaching positions attractive by offering full-time employment at as high a salary level as possible. For teachers already hired, districts can also match as closely as possible a teacher's certification(s) to teaching assignment; for teachers lacking in basic qualifications, districts can support them in completing requirements for full certification. While these observations may not be new or profound, they are consistent with the results obtained by this research on variables predictive of teacher turnover.

Finally, note should be taken of many of the predictor variables for which there was no evidence, in national perspective, of an association with teacher turnover. Demographic variables such as race and gender did not appear to be associated with turnover, nor did the

teacher qualification variable of highest degree earned. With respect to employment conditions, the availability of pension benefits did not appear to be associated with turnover. School characteristic variables not found to be associated with teacher turnover were school size, minority enrollment percentage, community type (i.e., rural, small town, suburban/large town, central city), and region of the nation. Of course, the national results reported here do not imply that some or all of these variables have not been associated with teacher turnover in some states or districts. From a national perspective, however, it is noteworthy that 60% of the predictor variables studied were associated with teacher turnover at the .01 level of statistical significance. Viewed in this light, the absence of a statistically significant association of many other predictor variables with teacher turnover is credible.

Differential Prediction of Teacher Turnover for Special and General Education

Teacher age and base salary were the only statistically significant predictors of teacher turnover for SETs. In addition to these two predictors, the variables of marital status, having a child less than six years of age, having recently earned a degree, having relatively little teaching experience, and teaching at the elementary level were associated with higher levels of turnover for GETs. Furthermore, having few dependent children, not being fully certified in one's main teaching assignment, being appointed to a part-time teaching position, and district size were also associated with higher levels of turnover when SETs and GETs were combined. In reviewing these findings, a question can be raised about the observed differences between predictors of SET turnover in comparison with GET turnover. Specifically, are the determinants of SET versus GET turnover genuinely different, or might the small number of statistically significant predictors for SET turnover be a product of the modest sample sizes in comparison with the much larger sample sizes for GETs?

In response to this question, it is important to note that, in the majority of the predictor variables studied, both the direction and magnitude of the observed relationships between predictor and turnover variables for SETs and for GETs separately were much more similar than dissimilar, in spite of considerably lower sample sizes for SETs. For example, the association between teaching experience and turnover status was not statistically significant for SETs, but

was so for GETs. Yet the pattern the results was the same, viz., more experienced teachers were less likely to leave teaching than relatively inexperienced teachers. While the results did not demonstrate that this principle applies specifically to SETs, the position taken here is to reserve judgment until this finding is confirmed or refuted by subsequent research, as is possible with similar data from TFSs administered in 1991-92 and 1994-95.

An alternative approach to investigating differences between SETs and GETs involved the direct comparisons of SETs and GETs with respect to the prediction of each of the three components of teacher status separately. For example, the difference between SETs and GETs was examined specifically its the association with the age variable for retention. For the purpose of addressing SET-GET differences, this approach is preferred to the method which examined the association between age categories and teacher status categories separately for SETs and for GETs. When direct comparisons of SETs and GETs were performed for seventeen predictor variables, few significant differences were found between SETs and GETs in the association of predictor variables with each of the three components of turnover. This evidence supports the premise that the prediction of turnover of SETs and GETs is more similar than dissimilar.

Nonetheless, SETs did differ from GETs in some respects. The most substantial and interesting differences pertained to SET versus GET stayers, the large group of teachers who continue in their teaching assignments from one year to the next. In contrast with GETs, SET stayers can be portrayed as predominantly younger females with teaching assignments concentrated at the elementary level who have, nonetheless, improved their qualifications by completing graduate degree study more often than have GET stayers. By comparison, SET movers differed from GET movers only in that SET movers had more recently earned degrees and had lower base salaries.

The comparison of SET and GET leavers was remarkable in demonstrating that they were very similar on a wide variety of variables, and the only difference detected was that married SETs were less likely to leave than married GETs. The results of both past research and this research that have been based on the actual behavior of teachers leaving the profession, little has been found that differentiates SET from GET leavers. It appears, therefore, that whatever factors are responsible for teacher attrition apply equally to SETs and GETs.

Relationship Between Current Findings and Other Research on Teacher Turnover

Other than a report by Bobbitt et al. (1994) based on NCES's TFSs for 1988-89 and 1991-92, no prior research has focused on the school transfer component of teacher turnover. Using data from the 1988-89 TFS, the research reported here extended the work of Bobbitt et al. in several ways: (a) a considerably larger number of potential predictor variables of school transfer have been analyzed, (b) the prediction of teacher status (including school transfer) has been analyzed separately for SETs and GETs, as well as for total teachers, (c) SETs and GETs have been compared in terms of the association of predictor variables with school transfer, and (d) tests of statistical significance for the associations between individual predictor variables and teacher status (including school transfer) have been performed, as well as tests for the differences between SETs and GETs with respect to school transfer. This represents an extensive investigation of school transfer.

In general, the results have demonstrated that school transfer and attrition have much in common. This might be expected because both represent mobility of the teaching force. A higher level of mobility, with respect to both school transfer and attrition, was characteristic of teachers who: (a) were under age 40 years, (b) had few or no dependent children, (c) had recently earned degrees, (d) were not fully certified in their main teaching assignment, (e) were relatively inexperienced, (f) were employed part-time, and (g) earned low salaries. There were three circumstances (having more dependent children, teaching at the secondary instead of the elementary level, and being employed in a district with less than 4,000 students) for which the rate of school transfer decreased while the attrition rate remained stable. There was only one circumstance for which attrition decreased while school transfer remained stable (having a child under six years). From the perspective of individual schools, both school transfer and attrition represent a loss of teachers who ordinarily must be replaced. The results suggest that the underlying reasons for school transfer and attrition are very similar, and that interventions designed to improve retention are likely to affect both components of turnover simultaneously.

In contrast with school transfer, a considerable body of research on teacher attrition has been produced during the past 25 years or so, mostly at the state and local levels. Unfortunately, much of this research has not been based on behavioral measures of actual attrition from

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teaching but instead on verbal reports of teachers' plans, commitments, satisfactions, and the like. When the results of this research (which used behavioral measures of attrition) are compared with the results of previous research which also used behavioral measures of attrition (as reviewed by Billingsley, 1993; Brownell & Smith, 1992; Darling-Hammond & Sclan, 1996), there is a reasonable degree of consistency in that many findings are parallel and none are opposite. Specifically, this and other studies have found that higher levels of attrition were characteristic of teachers who were less than 40 years old, who were relatively inexperienced, and who earned low salaries. In addition, previous research reviewed by Grissmer and Kirby (1987) identified a group of family status changes associated with teacher attrition (marriage, birth of a child, relocation). These findings are similar to results of this research which demonstrated that a change in marital status, a change from none to one or more dependent children, and having a child under age six were associated with higher rates of attrition.

In addition to these consistencies with past research findings, our research extended analyses to the national level, provided more recent data for most associations observed, and further demonstrated that teachers who have recently earned degrees and are employed part-time have higher rates of attrition--associations not identified before. It also demonstrated that, in national data, teachers who lack full certification in their main teaching assignments were more likely to leave teaching. The results of previous research on this association have been inconsistent.

Finally, this research has shown that a number of variables were not significantly related to teacher attrition. Some of these variables were teachers' gender, race/ethnicity, level of highest degree earned, school size, community type (central city, suburban, etc.), and region of the nation. These "negative" findings should at least moderate alarms that are occasionally sounded about the supposed disproportionate loss of male teachers, minority teachers, better educated teachers, and teachers from urban districts.

REFERENCES

Billingsley, B. S. (1993). Teacher retention and attrition in special and general education: A critical review of the literature. The Journal of Special Education, 27, 137-174.

Bobbitt, S. A., Leich, M. C., Whitener, S. D., & Lynch, H. F. (1994). Characteristics of stayers, movers, and leavers: Results from the Teacher Followup Survey, 1991-92 (NCES 94-337). Washington, DC: National Center for Education Statistics, U.S. Department of Education.

Boe, E. E., Bobbitt, S. A., & Cook, L. H. (1993). Whither didst thou go? Retention, reassignment, migration, and attrition of special and general education teachers in national perspective (Research Rep. 1993-TSD2). Philadelphia: University of Pennsylvania, Graduate School of Education, Center for Research and Evaluation in Social Policy.

Boe, E. E., Cook, L. H., Bobbitt, S. A., & Terhanian, G. (1995, November). National trends in teacher supply and demand: The significance of recently graduated teachers in special and general education. Paper presented at the meeting of the Teacher Education Division, the Council for Exceptional Children, Honolulu, HI.

Boe, E. E., Cook, L. H., Kaufman, M. J., & Danielson, L. (1995). Special and general education teachers in public schools: Sources of supply in national perspective (Research Rep. 1995-TSD1). Philadelphia: University of Pennsylvania, Graduate School of Education, Center for Research and Evaluation in Social Policy.

Brownell, M. T., & Smith, S. W. (1992). Attrition/retention of special education teachers: Critique of current research and recommendations for retention efforts. Teacher Education and Special Education, 15, 229-248.

Darling-Hammond, L., & Sclan, E. M. (1996). Who teaches and why: Dilemmas of building a profession for twenty-first century schools. In J. Sikula, T. J. Buttery, & Guyton, E. (Eds.), Handbook of research on teacher education (2nd ed.) (pp. 67-101). New York: Simon & Schuster Macmillan.

Faupel, E., Bobbitt, S., & Friedrichs, K. (1992). 1988-89 Teacher followup survey: Data file user's manual (NCES No. 92-058). Washington, DC: National Center for Education Statistics.

Grissmer, D. W., & Kirby, S. N. (1987). Teacher attrition: The uphill climb to staff the nation's schools (R-3512-CSTP). Santa Monica, CA: RAND Corporation.

Heyns, B. (1988). Educational defectors: A first look at teacher attrition in the NLS-72. Educational Researcher, 17, 24-32.

Kaufman, S. (1991). 1988 Schools and staffing survey sample design and estimation. Washington, DC: National Center for Education Statistics.

Rollefson, M. R. (1993). Teacher supply in the United States: Sources of newly hired teachers in public and private schools. Washington, DC: National Center for Education Statistics.

Singer, J. D. (1993). Once is not enough: Former special educators who return to teaching. Exceptional Children, 60, 58-72.

Snyder. T. D., & Hoffman, C. M. (1995). Digest of education statistics: 1995. Washington DC: National Center for Education Statistics, U.S. Department of Education.

APPENDIX A

Technical Supplement: Data Sources, Teacher Definitions, and Analysis Procedures

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The Schools and Staffing Survey (SASS)

The Schools and Staffing Surveys (SASS) of the National Center for Education Statistics, the U.S. Department of Education, provide a wealth of detailed information about elementary and secondary schools and their staffs. During the 1987-88 school year, SASS was administered to national probability samples of public- and private-sector teachers, principals, schools, and public-sector school districts. SASS was composed of four basic questionnaires, with minor variations for units in the public and private sectors. The four questionnaires used in the public sector, along with information about (a) the units sampled, (b) sample sizes available for analyses, and (c) weighted questionnaire response percentages, are shown in Table A1 of this Appendix. SASS questionnaires were administered by mail, with extensive telephone followup. Consequently, the questionnaire response percentages were quite high.

SASS was designed with schools as the primary sampling unit. Once a school was selected for the sample, the principal of that school was selected to complete the Administrator Questionnaire, and an average of four to eight teachers from that school was selected to complete the Teacher Questionnaire. In the public sector, the Teacher Demand and Shortage Questionnaire was completed for the district in which the school was located. This design, therefore, permits the linking of data from one questionnaire to another. For example, a teacher's perceptions of school climate can be compared with corresponding perceptions of the principal of his or her school. The sample design permits computations of national estimates for both special and general education teachers at the elementary and secondary levels in the public sector, as well as for many other variables.

The Public School Teacher Questionnaire concentrated on teachers' current teaching status, teaching experience, teacher training and certification, current teaching assignment and load,

Table A1

Description of the 1987-88 Schools and Staffing Survey (SASS) and the 1989 Teacher Followup Survey (TFS): Public Sector

Public Sector Questionnaire	Units Sampled	Available[a] Sample Size	Weighted[b] Response Percentage
Schools and Staffing Survey (1987-88)			
1. Teacher Demand and Shortage	School Districts	4,826	90.8%
2. Public School	Public Schools	8,326	94.4%
3. School Administrator	School Principals	8,519	91.9%
4. Public School Teacher	Public Teachers	40,593	86.4%
Teacher Followup Survey (1989)			
1. Current Teachers	Public Teachers	3,259	97.5%
a. Same School (Stayers)	Public Teachers	2,078	
b. Different School (Movers)	Public Teachers	1,181	
2. Former Teachers (Leavers)	Public Teachers	1,553	93.6%

[a] Data from SASS and TFS electronic databases.

[b] Data from the National Center for Education Statistics, USDE (Kaufman, 1991; Faupel et al., 1992). Copies of the SASS and TFS questionnaires are available from NCES.

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perceptions and attitudes toward teaching, compensation and incentives, and demographic and socioeconomic characteristics. It provides data suitable for identifying entering and transferring teachers, including transfers among schools, and for tracing these teachers back to their sources of supply.

A technical description of SASS was provided by Kaufman (1991).

The Teacher Followup Survey (TFS)

The Teacher Followup Survey (TFS) was a longitudinal sample survey of teachers who either continued in the teaching profession or who left the teaching profession in the year immediately following SASS (i.e., in 1989). Thus, TFS was derived from and linked to the SASS administered during the prior year. The design of TFS likewise provides for representative estimates of the numbers and attributes of teachers in both public and private sector schools. TFS was composed of two questionnaires, a Questionnaire for Current Teachers who continued in the teaching profession from the prior year, and a Questionnaire for Former Teachers who had left the teaching profession at the end of the prior school year. The Questionnaire for Current Teachers was administered to a national sample of teachers drawn from the prior SASS sample of teachers. One stratum of this sample included teachers who had continued teaching in the same school (stayers), and another stratum included teachers who had moved to a different school (movers). Teacher samples within each stratum were national probability samples. In contrast, the Questionnaire for Former Teachers was administered to all teachers included in the SASS samples who had left the teaching profession at the end of the prior school year (leavers). The sample sizes available for analyses and the weighted questionnaire response percentages for these followup questionnaires are also shown in Table A1 of this Appendix. The TFS questionnaires were administered by mail, with extensive telephone followup. Consequently, questionnaire response percentages were quite high.

The followup questionnaires for teachers concentrated on their current employment and teaching status, educational activities and future plans, a wide variety of opinions about teaching, and demographic and socioeconomic characteristics. Since the TFS samples of teachers were drawn from the SASS teacher samples, it is possible to link responses to SASS and TFS

questionnaires, thereby permitting analysis of similarities and differences from one year to the next in many variables of interest, such as factors related to teachers transferring among schools and teaching fields, and teachers leaving the profession.

A technical description of TFS was provided by Faupel, Bobbitt, and Friedrichs (1992).

Teacher Definitions Based on SASS and TFS Survey Data

In keeping with the SASS definition of a teacher and for the purposes of this research, a teacher was defined as:

> . . . any full-time or part-time teacher whose primary (i.e., main) assignment was teaching in any of grades K-12. Itinerant teachers were included, as well as long-term substitutes who were filling the role of a regular teacher[4] on an indefinite basis. An itinerant teacher is defined as a teacher who teaches at more than one school (Kaufman, 1991, p. 5).

Thus, excluded from the definition of a teacher were individuals who identified their main assignment as a pre-kindergarten teacher, short-term substitute, student teacher, non-teaching specialist (e.g., counselor, librarian, school social worker, occupational therapist, and the like), administrator, teacher aide, and other professional or support staff.

The selection of a sample of teachers meeting this definition of a teacher was accomplished by a two-stage process. First, schools selected into the SASS school sample were asked to provide teacher lists for their schools from which the teacher sample for the school was then selected. The individuals thus selected were sent the teacher questionnaire, the first item of which asked them to identify their main assignment at that school. Second, those who indicated that their main assignment was other than a regular, itinerant, or long-term substitute teacher (either full-time or part-time) were excluded from the final teacher sample. Thus, at the second stage, teachers self-defined their main assignment and, therefore, their status as a teacher.

Special education teachers (SETs) were defined for the analyses reported in this paper as public school teachers (K-12) who indicated that their current main teaching assignment was in any one of a variety of teaching specializations in special education provided by the SASS ques-

[4]A regular teacher, as used here, includes both SETs and GETs.

tionnaire, including "other special education." Given that the questionnaire included a category for "other special education," all elementary and secondary teachers with a main assignment in any area of special education should have been able to identify themselves as such, regardless of the particular certification categories or terminology used in their home state.

General education teachers (GETs) were defined here as all public school teachers (K-12) other than SETs.

The sizes of the samples of SETs and GETs used in this research are presented in Table A2. Because various analyses reported in this paper classify teachers by several dimensions of interest, the sizes of the teacher samples vary with the particular analysis conducted. The sample sizes used for each analysis, net of modest item nonresponse in some instances, are reported in Table A2 and the several tables of results of this paper in Appendix B.

Operational definitions of all variables analyzed in this research are available upon request from the senior author.

Analysis Procedures

Based on the teacher sample sizes as reported in the tables of this report, weighted national estimates of the numbers of teachers (as well as associated percentages and standard errors) were computed by procedures used by the NCES for complex sample survey data (Faupel, et al., 1992). These national estimates are presented in the tables of this paper and were used for statistical analyses testing for associations among variables. Because SASS and TFS data are subject to design effects due to stratification and clustering of the sample, standard errors were computed using the method of balanced repeated replications. Finally, chi square tests of the statistical significance of differences between SETs and GETs were performed on the nationally estimated numbers of teachers, and were adjusted appropriately for average weights and for average design effects due to the structure of the sampling procedure by using a software entitled WESVAR version Beta 2.0. Also computed were t-tests of the significance of differences between selected SET and GET percentages.

Table A2

Teacher Sample Sizes Available to Estimate the Number of Special and General Education Teachers Nationally, by Variables Potentially Related to Retention, Transfer and Attrition

Variable	Sample Sizes			Item Non-Response	
	Special Education (n=639)	General Education (n=4,159)	Total Teachers (n=4,798)	n	% Total Sample
Age	635	4,117	4,752	46	1.0%
Sex	637	4,146	4,783	15	0.3%
Race/Ethnicity	627	4,058	4,685	113	2.4%
Marital Status	634	4,122	4,756	42	0.9%
Child Age[a]	608	3,760	4,368	49	1.1%
Number of Children[a]	610	3,769	4,379	38	0.9%
Certification	517	3,474	3,991	807	16.8%
Year of Last Degree	599	3,858	4,457	341	7.1%
Degree Level	636	4,119	4,755	43	0.9%
Teaching Experience	639	4,159	4,798	-	-
Employment Status	639	4,159	4,798	-	-
Teaching Level	639	4,159	4,798	-	-
Base Salary[b]	499	3,408	3,907	315	7.5%
School Size	600	3,873	4,473	325	6.8%
District Size	561	3,756	4,317	481	10.0%
Community Type	600	3,873	4,473	325	6.8%
Region	639	4,159	4,798	-	-

Note. Sample sizes of full and part-time teachers combined at both the elementary and secondary levels in the public sector during the 1987-88 school year who were included in the sample for the Teacher Followup Survey during the 1988-89 school year.

Source. 1988-89 Teacher Followup Survey, National Center for Education Statistics, USDE.

[a]Excludes leavers who retired.

[b]Full-Time teachers only.

APPENDIX B

Tables of Results

Table 1 Teacher Status by Selected Demographic Characteristics

School Retention, School Transfer, and Exit Attrition Percentages from 1987-88 to 1988-89 by Selected Demographic Characteristics of Special Education, General Education, and Total Teachers in the Public Sector

Teacher Demographic Characteristics: 1987-1988		Statistic	Teacher Status in 1988-89 by Main Teaching Field in 1987-88								
			Special Education Teachers			General Education Teachers			Total Teachers		
			Stayer	Mover	Leaver	Stayer	Mover	Leaver	Stayer	Mover	Leaver
Total		Nat. Est.	196,057	29,759	19,475	1,860,513	152,445	122,773	2,056,570	182,205	142,248
		Row %	79.9%	12.1%	7.9%	87.1%	7.1%	5.8%	86.4%	7.6%	6.0%
		SE %	1.9%	1.3%	1.3%	0.5%	0.4%	0.4%	0.5%	0.4%	0.3%
		sample (n)	241	210	188	1,824	911	1,424	2,065	1,121	1,612
Age	< 30 Years	Row %	70.6	19.9	9.5	76.6	14.4	8.9	75.6	15.4	9.0
		SE %	4.5	3.5	2.2	1.5	1.4	1.1	1.4	1.2	1.0
	30-39 Years	Row %	83.3	10.8	6.0	85.5	8.4	6.0	85.2	8.8	6.0
		SE %	2.3	1.8	1.6	1.1	0.9	0.7	1.0	0.8	0.6
	40-49 Years	Row %	82.7	13.0	4.3[a]	91.3	5.8	2.9	90.8	6.2	3.0
		SE %	3.7	3.0	1.5	1.0	0.9	0.5	1.0	0.8	0.5
	50+ Years	Row %	78.8[a]	4.7[a]	16.5	87.8	3.7	8.5	87.0	3.8	9.2
		SE %	6.2	2.2	6.2	1.0	0.8	0.9	1.0	0.8	0.9
Sex	Female	Row %	80.9	11.5	7.6	86.6	7.4	6.1	85.9	7.9	6.3
		SE %	1.8	1.3	1.2	0.7	0.6	0.5	0.6	0.5	0.4
	Male	Row %	73.7	16.4[a]	9.9	88.4	6.6	5.0	87.6	7.1	5.3
		SE %	8.2	5.6	6.1	0.9	0.8	0.5	0.9	0.8	0.5
Race/ Ethnicity	White	Row %	79.1	12.7	8.2	87.1	6.9	5.9	86.3	7.5	6.2
		SE %	2.1	1.5	1.2	0.6	0.5	0.4	0.6	0.5	0.4
	Minority	Row %	83.3[a]	8.7[a]	8.0[a]	86.9	8.9	4.2	86.5	8.9	4.6
		SE %	6.5	4.0	6.0	1.8	1.1	1.1	1.7	1.0	1.2

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Table 1 Teacher Status by Selected Demographic Characteristics--Continued

School Retention, School Transfer, and Exit Attrition Percentages from 1987-88 to 1988-89 by Selected Demographic Characteristics of Special Education, General Education, and Total Teachers in the Public Sector

Teacher Demographic Characteristics: 1987-1988		Statistic	Teacher Status in 1988-89 by Main Teaching Field in 1987-88								
			Special Education Teachers			General Education Teachers			Total Teachers		
			Stayer	Mover	Leaver	Stayer	Mover	Leaver	Stayer	Mover	Leaver
Marital Status	Married	Row %	81.2	12.2	6.5	87.2	6.7	6.1	86.7	7.2	6.1
		SE %	2.0	1.5	1.0	0.6	0.5	0.4	0.5	0.4	0.4
	Formerly Married	Row %	71.4[a]	10.5	18.1[a]	90.7	5.6	3.8	88.1	6.2	5.7
		SE %	7.7	3.6	6.7	1.1	0.9	0.5	1.3	0.8	1.1
	Never Married	Row %	83.0	12.5	4.4[a]	83.7	10.5	5.8	83.6	10.8	5.6
		SE %	4.4	4.0	1.6	1.8	1.4	1.0	1.5	1.2	0.9
Child Age[b]	< 6 Years	Row %	76.3	12.1	11.6	83.1	9.0	7.8	82.3	9.4	8.3
		SE %	5.5	2.9	3.8	1.5	0.9	1.2	1.4	0.9	1.1
	6+ Years or None	Row %	82.2	12.2	5.5	89.4	6.8	3.8	88.7	7.4	3.9
		SE %	2.0	1.4	1.3	0.6	0.5	0.4	0.6	0.5	0.4
Number of Children[b]	0	Row %	81.9	13.0	5.2	86.8	8.4	4.8	86.2	9.0	4.8
		SE %	2.6	2.0	1.2	1.0	0.8	0.6	0.9	0.8	0.5
	1-2	Row %	79.2	12.2	8.6	88.9	6.6	4.5	88.0	7.1	4.9
		SE %	3.0	1.8	2.3	0.6	0.5	0.4	0.6	0.5	0.4
	3+	Row %	84.7[a]	8.6[a]	6.7[a]	91.5	5.5	3.0	91.0	5.7	3.3
		SE %	6.3	4.2	2.9	1.1	0.8	0.6	1.1	0.8	0.5

Note. Data from the 1987-88 Schools and Staffing Survey and the 1988-89 Teacher Followup Survey, National Center for Education Statistics, USDE.

[a] Sample size < 30.

[b] Excludes teachers who retired.

Table 2 Teacher Status by Selected Teacher Qualifications

School Retention, School Transfer, and Exit Attrition Percentages from 1987-88 to 1988-89 by Selected Qualifications of Special Education, General Education, and Total Teachers in the Public Sector

Teacher Qualifications: 1987-88		Statistic	Teacher Status in 1988-89 by Main Teaching Field in 1987-88								
			Special Education Teachers			General Education Teachers			Total Teachers		
			Stayer	Mover	Leaver	Stayer	Mover	Leaver	Stayer	Mover	Leaver
Total		Nat. Est.	196,057	29,759	19,475	1,860,513	152,445	122,773	2,056,570	182,225	142,248
		Row %	79.9%	12.1%	7.9%	87.1%	7.1%	5.8%	86.4%	7.6%	6.0%
		SE %	1.9%	1.3%	1.3%	0.5%	0.4%	0.4%	0.5%	0.4%	0.3%
		sample (n)	241	210	188	1,824	911	1,424	2,065	1,121	1,612
Certification	Full	Row %	82.5	10.3	7.2	87.9	6.6	5.5	87.4	6.9	5.7
		SE %	2.0	1.3	1.5	0.6	0.5	0.4	0.5	0.4	0.3
	Part	Row %	66.2 *	20.4	13.4	83.6	9.3	7.1	81.3	10.7	8.0
		SE %	7.0	5.3	4.3	2.1	1.4	1.1	2.2	1.6	1.2
Year of Last Degree	1985-87	Row %	77.5	15.8	6.7	77.6	14.0	8.5	77.6	14.3	8.1
		SE %	3.1	2.4	1.6	2.0	1.5	1.2	1.7	1.3	1.0
	1979-84	Row %	80.3	12.6	7.1	85.5	7.8	6.6	84.7	8.6	6.7
		SE %	3.0	2.4	1.5	1.1	0.9	0.8	1.0	0.8	0.7
	<1979	Row %	81.2	10.4	8.4	89.8	5.6	4.6	89.3	5.9	4.8
		SE %	4.2	2.1	3.0	0.7	0.5	0.4	0.7	0.5	0.4

Table 2 Teacher Status by Selected Teacher Qualifications--Continued

School Retention, School Transfer, and Exit Attrition Percentages from 1987-88 to 1988-89 by Selected Qualifications of Special Education, General Education, and Total Teachers in the Public Sector

Teacher Qualifications: 1987-88		Statistic	Teacher Status in 1988-89 by Main Teaching Field in 1987-88								
			Special Education Teachers			General Education Teachers			Total Teachers		
			Stayer	Mover	Leaver	Stayer	Mover	Leaver	Stayer	Mover	Leaver
Total		Nat. Est.	196,057	29,759	19,475	1,860,513	152,445	122,773	2,056,570	182,225	142,248
		Row %	79.9%	12.1%	7.9%	87.1%	7.1%	5.8%	86.4%	7.6%	6.0%
		SE %	1.9%	1.3%	1.3%	0.5%	0.4%	0.4%	0.5%	0.4%	0.3%
		sample (n)	241	210	188	1,824	911	1,424	2,065	1,121	1,612
Degree Level	BA/BS	Row %	75.2	15.7	9.1	86.1	7.9	6.0	85.4	8.4	6.2
		SE %	3.1	2.3	1.5	0.6	0.5	0.5	0.6	0.5	0.4
	MA/MS	Row %	81.2	10.8	8.0	88.4	6.2	5.4	87.4	6.8	5.7
		SE %	2.6	1.8	1.9	1.0	0.9	0.5	0.9	0.8	0.6
	Educ. Spec.+	Row %	88.0[a]	7.6[a]	4.4[a]	86.0	7.2	6.8	86.4	7.3	6.3
		SE %	3.8	2.8	2.0	2.2	1.6	1.1	1.8	1.3	0.9
Teaching Experience	< Four Years	Row %	70.5	19.1	10.4	77.2	13.8	9.1	76.3	14.5	9.2
		SE %	4.6	4.2	2.4	1.6	1.3	1.2	1.6	1.3	1.1
	Four +Years	Row %	81.4	11.0	7.6	88.2	6.4	5.4	87.6	6.8	5.6
		SE %	2.0	1.4	1.3	0.6	0.5	0.4	0.5	0.4	0.3

Note. Data from the 1987-88 Schools and Staffing Survey and the 1988-89 Teacher Followup Survey, National Center for Education Statistics, USDE.

[a] Sample size < 30.

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Table 3 Teacher Status by Assignment and Employment Conditions

School Retention, School Transfer, and Exit Attrition Percentages from 1987-88 to 1988-89 by Selected Teacher Assignment and Employment Conditions for Special Education, General Education, and Total Teachers in the Public Sector

Assignment and Employment Conditions: 1987-88		Statistic	Teacher Status in 1988-89 by Main Teaching Field in 1987-88								
			Special Education Teachers			General Education Teachers			Total Teachers		
			Stayer	Mover	Leaver	Stayer	Mover	Leaver	Stayer	Mover	Leaver
Total		Nat.Est.	196,057	29,759	19,475	1,860,513	152,445	122,773	2,056,570	182,205	142,248
		Row %	79.9	12.1%	7.9%	87.1%	7.1%	5.8%	86.4%	7.6%	6.0%
		SE %	1.9	1.3%	1.3%	0.5%	0.4%	0.4%	0.5%	0.4%	0.3%
		sample (n)	241	210	188	1,824	911	1,424	2,065	1,121	1,612
Employment Status	Full-Time	Row %	81.7	12.0	6.3	87.5	6.9	5.6	86.9	7.4	5.7
		SE %	1.8	1.5	0.8	0.6	0.5	0.4	0.5	0.4	0.4
	Part-Time	Row %	63.4	13.6 [a]	23.0	82.6	10.1	7.3	80.1	10.6	9.4
		SE %	11.1	4.8	9.6	2.4	1.9	1.0	2.5	1.7	1.6
Teaching Level	Elementary	Row %	78.6	13.6	7.9	85.7	8.5	5.8	84.8	9.2	6.1
		SE %	2.4	1.7	1.6	0.8	0.7	0.5	0.7	0.6	0.5
	Secondary	Row %	82.4	9.6	8.1	88.6	5.8	5.7	88.1	6.1	5.9
		SE %	3.7	1.9	2.6	0.6	0.5	0.4	0.6	0.5	0.4
Base Salary [b]	$1,000-$20,000	Row %	70.3	20.0	9.7	83.6	10.3	6.1	82.2	11.3	6.5
		SE %	4.4	3.5	2.1	1.2	1.0	0.8	1.1	1.0	0.7
	$20,001-$30,000	Row %	83.2	10.5	6.4	87.7	6.7	5.6	87.2	7.1	5.7
		SE %	2.3	1.8	1.4	1.0	0.7	0.7	0.9	0.6	0.6
	$30,001+	Row %	93.6	3.1 [a]	3.2 [a]	90.7	4.6	4.6	91.0	4.5	4.5
		SE %	1.8	1.4	0.8	1.3	1.0	0.6	1.2	1.0	0.6

Note. Data from the 1987-88 Schools and Staffing Survey and the 1988-89 Teacher Followup Survey, National Center for Education Statistics, USDE.

[a] Sample size < 30.

[b] Excludes part-time teachers.

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Table 4 Teacher Status by Selected School Characteristics

School Retention, School Transfer, and Exit Attrition Percentages from 1987-88 to 1988-89 by Selected School Characteristics for Special Education, General Education, and Total Teachers in the Public Sector

School Characteristics: 1987-88		Statistic	Teacher Status in 1988-89 by Main Teaching Field in 1987-88								
			Special Education Teachers			General Education Teachers			Total Teachers		
			Stayer	Mover	Leaver	Stayer	Mover	Leaver	Stayer	Mover	Leaver
Total		Nat.Est.	196,057	29,759	19,475	1,860,513	152,445	122,773	2,056,570	182,205	142,248
		Row %	79.9	12.1%	7.9%	87.1%	7.1%	5.8%	86.4%	7.6%	6.0%
		SE %	1.9	1.3%	1.3%	0.5%	0.4%	0.4%	0.5%	0.4%	0.3%
		sample (n)	241	210	188	1,824	911	1,424	2,065	1,121	1,612
School Size	2-400	Row %	77.6	14.1	8.3	87.4	7.8	4.8	86.2	8.6	5.2
		SE %	3.3	2.4	1.8	1.1	1.0	0.3	1.1	1.0	0.3
	401-700	Row %	78.9	14.2	6.9	86.6	6.7	6.7	85.8	7.4	6.7
		SE %	3.9	2.9	2.7	1.0	0.6	0.7	1.0	0.6	0.7
	701+	Row %	85.8	8.3	5.8	88.1	6.8	5.1	87.8	7.0	5.2
		SE %	3.4	1.9	2.0	1.0	0.9	0.4	0.9	0.8	0.4
District Size	2-1000	Row %	76.3*	14.4	9.3*	89.9	5.1	5.0	89.0	5.7	5.3
		SE %	10.6	6.5	5.4	1.2	1.0	0.6	1.2	1.0	0.6
	1,001-4,000	Row %	81.9	9.7	8.4	88.3	5.6	6.2	87.6	6.0	6.4
		SE %	3.9	2.0	3.2	1.3	0.8	1.0	1.2	0.7	0.9
	4,001-14,000	Row %	76.1	15.8	8.0	85.6	9.2	5.1	84.7	9.9	5.4
		SE %	5.1	3.1	3.1	1.3	1.2	0.6	1.2	1.1	0.6
	14,001+	Row %	81.4	10.8	7.8	86.9	7.7	5.4	86.3	8.0	5.7
		SE %	3.1	2.4	1.8	1.1	0.8	0.7	0.9	0.7	0.6

Table 4 Teacher Status by Selected School Characteristics--Continued

School Retention, School Transfer, and Exit Attrition Percentages from 1987-88 to 1988-89 by Selected School Characteristics for Special Education, General Education, and Total Teachers in the Public Sector

School Characteristics: 1987-88		Statistic	Teacher Status in 1988-89 by Main Teaching Field in 1987-88								
			Special Education Teachers			General Education Teachers			Total Teachers		
			Stayer	Mover	Leaver	Stayer	Mover	Leaver	Stayer	Mover	Leaver
Total		Nat.Est.	196,057	29,759	19,475	1,860,513	152,445	122,773	2,056,570	182,205	142,248
		Row %	79.9	12.1%	7.9%	87.1%	7.1%	5.8%	86.4%	7.6%	6.0%
		SE %	1.9	1.3%	1.3%	0.5%	0.4%	0.4%	0.5%	0.4%	0.3%
		sample (n)	241	210	188	1,824	911	1,424	2,065	1,121	1,612
Community Type	Rural	Row %	83.1	12.1	4.8*	86.0	7.6	6.4	85.7	8.1	6.2
		SE %	3.5	2.8	1.4	1.7	1.3	1.0	1.6	1.3	0.9
	Small Town	Row %	76.5	13.4	10.1	88.5	5.9	5.5	87.6	6.5	5.9
		SE %	6.0	3.3	4.5	1.2	0.8	0.8	1.2	0.7	0.8
	Suburban/ Large Town	Row %	81.3	11.2	7.5	88.4	5.7	5.9	87.6	6.3	6.1
		SE %	3.4	2.2	2.5	1.0	0.6	0.7	0.9	0.6	0.7
	Central City	Row %	82.0	12.2	5.8	86.0	9.1	4.9	85.6	9.4	5.0
		SE %	3.3	2.5	1.8	1.2	1.0	0.6	1.1	0.9	0.5
Region	Northeast	Row %	84.9	9.6*	5.4	89.7	4.7	5.6	89.2	5.2	5.6
		SE %	2.8	2.4	1.5	1.4	0.8	1.0	1.2	0.8	1.0
	North Central	Row %	81.7	9.2	9.2	87.1	7.3	5.6	86.5	7.5	6.0
		SE %	3.6	2.3	2.4	1.3	0.9	0.8	1.2	0.8	0.7
	South	Row %	73.6	16.3	10.1	86.0	8.1	5.8	84.7	9.0	6.3
		SE %	4.2	2.5	3.1	0.8	0.7	0.6	0.7	0.7	0.5
	West	Row %	84.6	11.1	4.3	86.2	7.8	6.0	86.0	8.2	5.8
		SE %	4.2	3.2	1.3	1.3	1.2	0.8	1.3	1.1	0.7

Note. Data from the 1987-88 Schools and Staffing Survey and the 1988-89 Teacher Followup Survey, National Center for Education Statistics, USDE.

* Sample size < 30

Table 5 Chi Square Tests of Teacher Status by Predictor Variables

Chi Square Test Results for Group Differences Reported in Tables 1, 2, 3, and 4

		Stayer vs. Mover vs. Leaver		
Predictor Variable	df	SET	GET	TOTAL
Table 1				
Age	6	18.52 **	90.76 ***	113.79 ***
Sex	2	1.08	2.72	2.66
Race/Ethnicity	2	0.50	4.49	2.84
Marital Status	4	9.19	19.39 ***	13.04 *
Child Age[a]	2	4.06	16.38 ***	19.76 ***
Number of Children[a]	4	3.61	11.70 *	13.77 **
Table 2				
Certification	2	7.28 *	8.24 *	14.04 ***
Year of Last Degree	4	2.30	47.76 ***	58.74 ***
Degree Level	4	7.74	6.16	5.37
Teaching Experience	2	7.10 *	43.36 ***	50.82 ***
Table 3				
Employment Status	2	5.98	6.08 *	9.89 **
Teaching Level	2	1.41	15.48 ***	21.90 ***
Base Salary[b]	4	28.84 ***	21.36 ***	35.51 ***
Table 4				
School Size	4	4.59	5.80	6.43
District Size	6	3.11	14.00 *	17.14 **
Community Type	6	2.73	11.65	10.75
Region	6	10.25	9.08	12.16

* $p < .05$
** $p < .01$
*** $p < .001$

[a] Excludes teachers who retired.

[b] Excludes part-time teachers.

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Table 6 SET-GET Comparisons by Selected Demographic Characteristics

Comparisons of Special and General Education Teachers in the Public Sector with Respect to School Retention, School Transfer, and Exit Attrition from 1987-88 to 1988-89 as a Function of Selected Demographic Characteristics

Teacher Demographic Characteristics: 1987-1988		Statistic	Teacher Status in 1988-89 by Main Teaching Field in 1987-88								
			Stayer			Mover			Leaver		
			SET	GET	TOTAL	SET	GET	TOTAL	SET	GET	TOTAL
Total		Nat. Est.	196,057	1,860,513	2,056,570	29,759	152,445	182,225	19,475	122,773	142,248
		SE Est.	17,350	50,540	55,800	3,232	8,973	9,942	3,175	7,556	7,605
		sample (n)	241	1,824	2,065	210	911	1,121	188	1,424	1,612
Age	< 30 Years	Col %	17.0	9.4	10.1	31.8	21.7	23.3	23.1	16.9	17.8
		SE %	2.8	0.5	0.5	4.9	2.0	1.8	5.0	2.0	1.9
	30-39 Years	Col %	46.5	30.2	31.8	40.1	36.4	37.0	33.4	33.0	33.0
		SE %	3.7	1.4	1.4	4.6	2.9	2.5	7.1	3.9	3.4
	40-49 Years	Col %	21.0	40.1	38.2	22.0	31.4	29.8	11.0*	19.7	18.5
		SE %	3.2	1.6	1.5	4.4	3.6	3.0	4.0	3.4	3.0
	50+ Years	Col %	15.4*	20.3	19.9	6.1*	10.5	9.8	32.5*	30.4	30.7
		SE %	3.1	0.9	0.9	2.2	1.9	1.7	9.6	2.4	2.4
Sex	Female	Col %	87.0	68.4	70.1	81.0	71.2	72.8	82.4	72.6	74.0
		SE %	3.1	1.6	1.5	3.8	2.5	2.2	8.5	2.2	2.3
	Male	Col %	13.0	31.6	29.9	19.0*	28.8	27.2	17.6	27.4	26.0
		SE %	3.1	1.6	1.5	3.8	2.5	2.2	8.5	2.2	2.3
Race/ Ethnicity	White	Col %	86.1	88.2	88.0	90.6	85.3	86.2	87.0	91.5	90.8
		SE %	2.9	1.1	1.0	3.0	1.8	1.4	8.4	1.8	1.9
	Minority	Col %	13.9*	11.8	12.0	9.4*	14.7	13.8	13.0*	8.5	9.2
		SE %	2.9	1.1	1.0	3.0	1.8	1.4	8.4	1.8	1.9

Table 6 SET-GET Comparisons by Selected Demographic Characteristics--Continued

Comparisons of Special and General Education Teachers in the Public Sector with Respect to School Retention, School Transfer, and Exit Attrition from 1987-88 to 1988-89 as a Function of Selected Demographic Characteristics

Teacher Demographic Characteristics: 1987-88		Statistic	Teacher Status in 1988-89 by Main Teaching Field in 1987-88								
			Stayer			Mover			Leaver		
			SET	GET	TOTAL	SET	GET	TOTAL	SET	GET	TOTAL
Marital Status	Married	Col %	64.9	74.1	73.2	65.1	69.9	69.1	52.4	78.2	74.6
		SE %	4.8	1.4	1.2	4.0	2.2	1.9	8.5	2.0	2.3
	Formerly Married	Col %	14.3[a]	12.5	12.7	14.0	9.5	10.2	36.4[a]	7.8	11.8
		SE %	3.6	1.0	1.0	3.1	1.6	1.4	10.0	0.9	1.9
	Never Married	Col %	20.9	13.4	14.1	21.0	20.6	20.7	11.2[a]	14.0	13.6
		SE %	4.0	0.9	0.8	3.4	2.2	1.9	4.0	2.1	1.9
Child Age[b]	< 6 Years	Col %	18.7	16.2	16.4	19.6	21.5	21.2	34.2	30.2	30.8
		SE %	4.2	0.8	0.9	3.6	2.3	1.9	7.8	4.6	4.2
	6+ Years or None	Col %	81.3	83.8	83.6	80.4	78.5	78.8	65.8	69.8	69.2
		SE %	4.2	0.8	0.9	3.6	2.3	1.9	7.8	4.6	4.2
Number of Children[b]	0	Col %	50.4	40.1	41.0	52.5	47.8	48.5	38.0	43.8	42.9
		SE %	5.0	1.3	1.2	4.6	3.2	2.6	7.0	3.8	3.5
	1-2	Col %	41.6	48.3	47.7	42.1	43.7	43.4	54.3	48.7	49.5
		SE %	4.8	1.5	1.5	4.6	2.9	2.4	7.6	3.7	3.5
	3+	Col %	8.0[a]	11.6	11.3	5.4[a]	8.6	8.0	7.6[a]	7.5	7.6
		SE %	1.9	1.2	1.0	1.9	1.0	1.0	2.9	1.2	1.0

Note. Data from the 1987-88 Schools and Staffing Survey and the 1988-89 Teacher Followup Survey, National Center for Education Statistics, USDE.

Note. Col. percents add to 100% separately for three categories of SETs and three categories of GETs.

[a] Sample size < 30.

[b] Excludes teachers who retired.

Table 7 SET-GET Comparisons by Selected Teacher Qualifications

Comparisons of Special and General Education Teachers in the Public Sector with Respect to School Retention, School Transfer, and Exit Attrition from 1987-88 to 1988-89 as a Function of Selected Qualifications

Teacher Qualifications: 1987-88		Statistic	Teacher Status in 1988-89 by Main Teaching Field in 1987-88								
			Stayer			Mover			Leaver		
			SET	GET	TOTAL	SET	GET	TOTAL	SET	GET	TOTAL
Total		Nat. Est.	196,057	1,860,513	2,056,570	29,759	152,445	182,225	19,475	122,773	142,248
		SE Est.	17,350	50,540	55,800	3,232	8,973	9,942	3,175	7,556	7,605
		sample (n)	241	1,824	2,065	210	911	1,121	188	1,424	1,612
Certification	Full	Col %	91.4	92.7	92.6	81.2	89.6	88.3	82.0	90.4	89.3
		SE %	2.2	0.8	0.8	4.0	1.3	1.3	5.4	1.1	1.2
	Part	Col %	8.6 [a]	7.3	7.4	18.8	10.4	11.7	18.0	9.6	10.7
		SE %	2.2	0.8	0.8	4.0	1.3	1.3	5.4	1.1	1.2
Year of Last Degree	1985-87	Col %	25.1	10.6	11.9	32.4	23.4	24.9	23.2	18.2	18.9
		SE %	3.9	0.7	0.8	3.6	2.7	2.4	5.9	2.5	2.3
	1979-84	Col %	38.1	22.3	23.8	37.8	25.2	27.3	36.1	27.3	28.5
		SE %	4.4	1.2	1.1	4.9	2.4	2.0	7.2	3.2	3.0
	<1979	Col %	36.8	67.1	64.2	29.8	51.5	47.8	40.8	54.5	52.7
		SE %	4.5	1.3	1.2	4.7	3.2	2.7	9.1	3.8	3.6

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Table 7 SET-GET Comparisons by Selected Teacher Qualifications--Continued

Comparisons of Special and General Education Teachers in the Public Sector with Respect to School Retention, School Transfer, and Exit Attrition from 1987-88 to 1988-89 as a Function of Selected Qualifications

Teacher Qualifications: 1987-88		Statistic	Teacher Status in 1988-89 by Main Teaching Field in 1987-88								
			Stayer			Mover			Leaver		
			SET	GET	TOTAL	SET	GET	TOTAL	SET	GET	TOTAL
Total		Nat. Est.	196,057	1,860,513	2,056,570	29,759	152,445	182,225	19,475	122,773	142,248
		SE Est.	17,350	50,540	55,800	3,232	8,973	9,942	3,175	7,556	7,605
		sample (n)	241	1,824	2,065	210	911	1,121	188	1,424	1,612
Degree Level	BA/BS	Col %	32.1	53.9	51.8	44.1	59.8	57.2	39.0	56.2	53.9
		SE %	4.1	1.5	1.4	5.3	3.4	2.8	8.0	2.5	2.5
	MA/MS	Col %	55.4	40.5	42.0	48.7	34.5	36.8	54.7	37.1	39.5
		SE %	3.9	1.4	1.4	5.5	3.6	3.0	7.5	2.6	2.5
	Educ. Spec.+	Col %	12.5[a]	5.6	6.2	7.1[a]	5.7	5.9	6.2[a]	6.6	6.6
		SE %	2.9	0.7	0.7	2.3	1.2	1.2	2.2	0.9	0.8
Teaching Experience	<Four Years	Col %	11.9	9.0	9.3	21.2	19.7	19.9	17.7	16.1	16.3
		SE %	2.5	0.5	0.5	3.4	1.9	1.8	4.1	2.0	1.8
	Four + Years	Col %	88.1	91.0	90.7	78.8	80.3	80.1	82.3	83.9	83.7
		SE %	2.5	0.5	0.5	3.4	1.9	1.8	4.1	2.0	1.8

Note. Data from the 1987-88 Schools and Staffing Survey and the 1988-89 Teacher Followup Survey, National Center for Education Statistics, USDE.

Note. Col percents add to 100% separately for three categories of SETs and three categories of GETs.

[a] Sample size < 30.

Table 8 SET-GET Comparisons by Assignment and Employment Conditions

Comparisons of Special and General Education Teachers in the Public Sector with Respect to School Retention, School Transfer, and Exit Attrition from 1987-88 to 1988-89 as a Function of Teacher Assignment and Employment Conditions

Assignment and Employment Conditions: 1987-88		Statistic	Teacher Status in 1988-89 by Main Teaching Field in 1987-88								
			Stayer			Mover			Leaver		
			SET	GET	TOTAL	SET	GET	TOTAL	SET	GET	TOTAL
Total		Nat.Est.	196,057	1,860,513	2,056,570	29,759	152,445	182,205	19,475	122,773	142,248
		SE Est.	17,350	50,540	55,800	3,232	8,973	9,942	3,175	7,556	7,605
		sample (n)	241	1,824	2,065	210	911	1,121	188	1,424	1,612
Employment Status	Full-Time	Col %	92.2	92.8	92.8	89.0	89.2	89.2	71.6	90.3	87.8
		SE %	2.2	0.8	0.8	2.4	1.9	1.6	9.1	1.2	1.9
	Part-Time	Col %	7.8	7.2	7.2	11.0[a]	10.8	10.8	28.4	9.7	12.2
		SE %	2.2	0.8	0.8	2.4	1.9	1.6	9.1	1.2	1.9
Teaching Level	Elementary	Col %	62.7	49.4	50.6	71.4	59.8	61.7	63.2	50.8	52.5
		SE %	3.8	1.3	1.2	3.9	2.7	2.2	8.4	2.6	2.7
	Secondary	Col %	37.3	50.6	49.4	28.6	40.2	38.3	36.8	49.2	47.5
		SE %	3.8	1.3	1.2	3.9	2.7	2.2	8.4	2.6	2.7
Base Salary[b]	$1,000-$20,000	Col %	20.2	22.0	21.8	42.6	34.3	35.6	35.5	25.6	26.8
		SE %	3.8	1.2	1.0	4.3	3.3	2.9	6.6	2.4	2.2
	$20,001-$30,000	Col %	54.9	49.5	50.1	51.2	47.4	48.0	53.6	51.1	51.4
		SE %	4.2	1.5	1.4	4.1	3.2	2.7	7.8	3.8	3.4
	$30,001+	Col %	24.8	28.4	28.1	6.2[a]	18.3	16.4	11.0[a]	23.3	21.8
		SE %	4.4	1.1	1.1	2.6	3.3	2.9	3.2	3.2	2.7

Note. Data from the 1987-88 Schools and Staffing Survey and the 1988-89 Teacher Followup Survey, National Center for Education Statistics, USDE.

Note. Col. percents add to 100% separately for three categories of SETs and three categories of GETs.

[a] Sample size < 30.

[b] Excludes part-time teachers.

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Table 9 SET-GET Comparisons by Selected School Characteristics

Comparisons of Special and General Education Teachers in the Public Sector with Respect to School Retention, School Transfer, and Exit Attrition from 1987-88 to 1988-89 as a Function of Selected School Characteristics

School Characteristics: 1987-1988		Statistic	Teacher Status in 1988-89 by Main Teaching Field in 1987-88								
			Stayer			Mover			Leaver		
			SET	GET	TOTAL	SET	GET	TOTAL	SET	GET	TOTAL
Total		Nat. Est.	196,057	1,860,513	2,056,570	29,759	152,445	182,205	19,475	122,773	142,248
		SE Est.	17,350	50,540	55,800	3,232	8,973	9,942	3,175	7,556	7,605
		sample (n)	241	1,824	2,065	210	911	1,121	188	1,424	1,612
School Size	2-400	Col %	30.2	27.6	27.8	37.0	30.4	31.5	37.7	23.7	25.5
		SE %	4.0	1.4	1.3	4.8	3.3	3.1	7.5	1.4	1.5
	401-700	Col %	31.5	35.9	35.5	38.1	34.5	35.1	31.9	43.4	41.9
		SE %	4.1	1.4	1.3	5.1	2.6	2.3	10.0	2.9	2.7
	701+	Col %	38.3	36.6	36.7	24.9	35.1	33.4	30.4	32.9	32.6
		SE %	5.3	1.7	1.6	3.7	3.6	3.2	7.5	2.5	2.1
District Size	2-1,000	Col %	7.9*	13.9	13.3	9.8	9.6	9.6	9.4*	12.3	11.9
		SE %	2.6	1.0	0.9	2.7	1.7	1.5	2.6	1.2	1.0
	1,001-4,000	Col %	32.4	30.3	30.5	25.3	23.4	23.8	32.3	33.6	33.4
		SE %	4.7	1.7	1.7	3.7	3.0	2.5	9.4	4.0	3.7
	4,001-14,000	Col %	25.2	26.9	26.8	34.6	35.6	35.5	25.9	25.7	25.7
		SE %	4.8	1.4	1.4	4.4	3.4	2.7	7.6	2.9	2.7
	14,001+	Col %	34.5	28.9	29.4	30.2	31.3	31.1	32.4	28.4	29.0
		SE %	4.1	1.4	1.3	3.9	2.8	2.3	7.6	2.9	2.7

Table 9 SET-GET Comparisons by Selected School Characteristics--Continued

Comparisons of Special and General Education Teachers in the Public Sector with Respect to School Retention, School Transfer, and Exit Attrition from 1987-88 to 1988-89 as a Function of Selected School Characteristics

School Characteristics: 1987-1988		Statistic	Teacher Status in 1988-89 by Main Teaching Field in 1987-88								
			Stayer			Mover			Leaver		
			SET	GET	TOTAL	SET	GET	TOTAL	SET	GET	TOTAL
Total		Nat. Est.	196,057	1,860,513	2,056,570	29,759	152,445	182,205	19,475	122,773	142,248
		SE Est.	17,350	50,540	55,800	3,232	8,973	9,942	3,175	7,556	7,605
		sample (n)	241	1,824	2,065	210	911	1,121	188	1,424	1,612
Community Type	Rural	Col %	19.0	17.6	17.8	18.6	19.2	19.1	12.8	20.3	19.4
		SE %	3.2	1.4	1.2	3.7	2.8	2.6	3.0	2.5	2.3
	Small Town	Col %	16.5	23.6	22.9	19.5	19.5	19.5	25.3	23.0	23.2
		SE %	3.3	1.3	1.2	3.2	2.5	2.1	7.8	2.9	2.8
	Suburban/ Large Town	Col %	35.2	30.4	30.8	32.7	24.0	25.4	37.7	31.5	32.3
		SE %	3.8	1.4	1.4	5.2	2.2	2.1	9.6	4.2	3.8
	Central City	Col %	29.3	28.4	28.5	29.2	37.2	35.9	24.2	25.2	25.1
		SE %	3.3	1.6	1.5	4.4	3.2	2.7	7.1	2.6	2.2
Region	Northeast	Col %	23.4	21.9	22.0	17.5*	14.1	14.7	15.1	20.6	19.8
		SE %	3.4	1.1	1.0	4.4	2.2	1.8	4.2	3.3	3.0
	North Central	Col %	27.3	26.3	26.4	20.2	26.8	25.8	30.8	25.8	26.5
		SE %	3.4	1.4	1.2	4.8	2.5	2.2	6.5	2.7	2.3
	South	Col %	33.1	34.8	34.6	48.3	40.1	41.5	45.7	35.8	37.1
		SE %	4.1	1.0	0.9	5.7	2.9	2.7	8.1	3.8	3.4
	West	Col %	16.2	17.0	17.0	14.0	18.9	18.1	8.4	17.8	16.5
		SE %	3.1	1.1	1.0	2.9	2.5	2.2	2.7	2.3	2.1

Note. Data from the 1987-88 Schools and Staffing Survey and the 1988-89 Teacher Followup Survey, National Center for Education Statistics, USDE.

Note. Col. percents add to 100% separately for three categories of SETs and three categories of GETs.

* Sample size < 30.

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Table 10 Chi Square Tests of SET-GET Comparisons by Predictor Variables

Chi Square Test Results for Group Differences Reported in Tables 6, 7, 8, and 9

Predictor Variable	df	SET vs. GET		
		Stayer	Mover	Leaver
Table 6				
Age	3	34.73 ***	7.24	2.41
Sex	1	26.76 ***	4.66 *	1.37
Race/Ethnicity	1	0.42	1.66	0.27
Marital Status	2	3.68	2.02	10.45 **
Child Age[a]	1	0.37	0.16	0.24
Number of Children[a]	2	5.57	1.73	0.67
Table 7				
Certification	1	0.39	4.89 *	3.00
Year of Last Degree	2	32.86 ***	13.38 **	3.19
Degree Level	2	16.88 ***	6.69 *	6.24 *
Teaching Experience	1	1.48	0.20	0.13
Table 8				
Employment Status	1	0.06	0.01	3.08
Teaching Level	1	10.12 **	5.18 *	2.23
Base Salary[b]	2	1.19	9.50 **	4.55
Table 9				
School Size	2	0.93	4.02	3.45
District Size	3	4.20	0.16	0.48
Community Type	3	4.13	3.44	1.40
Region	3	0.34	3.47	4.57

* $p < .05$
** $p < .01$
*** $p < .001$

[a] Excludes teachers who retired.

[b] Excludes part-time teachers.

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Listing of NCES Working Papers to Date

Number	Title	Contact
94-01	Schools and Staffing Survey (SASS) Papers Presented at Meetings of the American Statistical Association	Dan Kasprzyk
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94-03	1991 Schools and Staffing Survey (SASS) Reinterview Response Variance Report	Dan Kasprzyk
94-04	The Accuracy of Teachers' Self-reports on their Postsecondary Education: Teacher Transcript Study, Schools and Staffing Survey	Dan Kasprzyk
94-05	Cost-of-Education Differentials Across the States	William Fowler
94-06	Six Papers on Teachers from the 1990-91 SASS and Other Related Surveys	Dan Kasprzyk
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95-02	QED Estimates of the 1990-91 Schools and Staffing Survey: Deriving and Comparing QED School Estimates with CCD Estimates	Dan Kasprzyk
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95-18	An Agenda for Research on Teachers and Schools: Revisiting NCES' Schools and Staffing Survey	Dan Kasprzyk
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96-03	National Education Longitudinal Study of 1988 (NELS:88) Research Framework and Issues	Jeffrey Owings
96-04	Census Mapping Project/School District Data Book	Tai Phan

Listing of NCES Working Papers to Date (Continued)

Number	Title	Contact
96-05	Cognitive Research on the Teacher Listing Form for the Schools and Staffing Survey	Dan Kasprzyk
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